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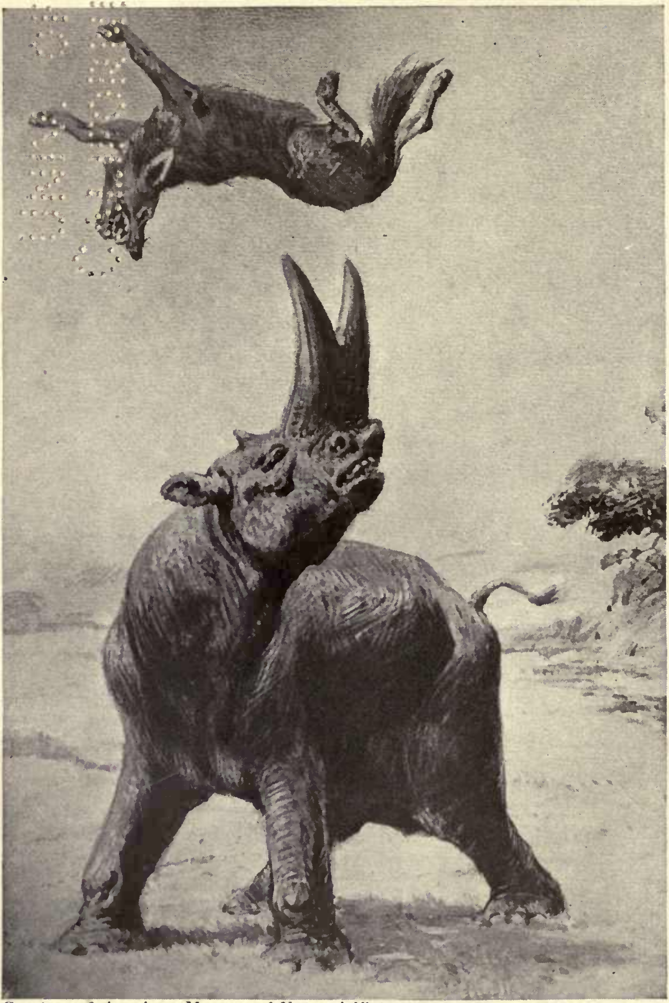

Courtesy of American Museum of Natural History.

A BATTLE TO THE DEATH.

Arsinothere of three million years ago impaling a carnivorous creodont, somewhat resembling a hyena.

THE
MONSTER-HUNTERS

BY

FRANCIS ROLT-WHEELER
Author of "U. S. Service Series"

WITH FIFTY-THREE ILLUSTRATIONS, MOSTLY FROM PHOTOGRAPHS LOANED BY THE AMERICAN MUSEUM OF NATURAL HISTORY

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THE MONSTER-HUNTERS

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954158

PREFACE

Mystery and marvel are the gates to that wild world where the Monsters of the past lived out their monstrous lives. Adventure that carries one into those steaming coal forests, into those black and reptile-haunted swamps, that sets one face to face with the sprawling brood of giants, terribly menacing and terribly true, holds a thrill peculiar to itself. So startling, so madly strange seem the conditions that we scarcely dare to believe the adventure true, and then, the slow processes of Time turn one by one the pages of that age-old book, and the most extravagant flight of the imagination is outdistanced by facts.

Out to the waste and desert corners of the earth, men go to read these stories. They find the bones of the colossal gladiators still locked in their Titanic struggle, though that struggle ended in death ten million years ago; they find a ruthless war of tooth and claw made tenfold more ferocious than any combat of living beasts of prey by the huge bulk, and the terrible offensive and defensive weapons of those vast animals that the Earth could no longer tolerate.

There is scarcely a place in all the world where a boy cannot find for himself some tokens of this Age of Monsters, where he cannot himself be the hunter and the captor of strange things. In this book all that is told of that grim past is true and every statement may be taken as scientifically accurate. To show to the boys of the United States the thrill of discovery in their own country, and the splendor of the work that their scientists and museum experts are accomplishing, is the aim and purpose of

THE AUTHOR.

CONTENTS

PAGE

CHAPTER I

KILLING THE LAST DRAGON 1

CHAPTER II

THE MONSTERS THAT NEVER WERE 28

CHAPTER III

PIRATES OF THE AIR 52

CHAPTER IV

SEEING THE SEA-SERPENT 81

CHAPTER V

THE MAD ARTIST AT THE SPHINX 116

CHAPTER VI

ACROSS THE DESERT ON CAMEL-BACK 154

CHAPTER VII

FINDING THE ELEPHANT'S GREAT-GRANDFATHER . . . 187

CHAPTER VIII

THE VALLEY OF FOSSIL WHALES 208

CHAPTER IX

THE MARCH OF THE MASTODONS 237

CHAPTER X

THE THREE-TOED HORSE 277

CHAPTER XI

UNDER THE CLAWS OF A DINOSAUR 306

ILLUSTRATIONS

A Battle to the Death . . . . *Frontispiece*

FACING PAGE

Dragon Slain by Regulus 20

Scylla of the Seven Heads 20

Merman from the Mediterranean 20

The Dragon of the Drachenfels 20

Monsters Thought Real by the Ancients 20

The Unicorn in China 42

Stegosaurus, the Super-Dreadnought of Old 50

The Largest Creature that Ever Flew 72

A Flying Nightmare of Olden Time 72

Sea-Serpent Attacking a Pirate Ship 82

The Fiercest Monster that Ever Lived 84

The Sharp-Toothed Death 86

The Jurassic Sea-Serpent 86

Combat Between Ichthyosaurus and Plesiosaurus . . 88

Sea-Serpent Swallowing Sailors 96

The Most Authentic Sea-Serpent 96

Waiting for the Load 158

Roaring at the Weight 158

Rising, Still Protesting 158

Ready for Desert March 158

A Camel Being Loaded with Half-Ton Fossil Cases . . 158

At the Temple of Qasr-el-Sagha 194

Across the Libyan Desert 194

ILLUSTRATIONS

FACING PAGE

Zeuglodon, the Primitive Whale 220
Climbing to the Fossils 228
Finding a Sea-Cow Skeleton 228
The Four-Horned Giants at Bay 232
Into the Heart of Mexico 242
Carrying Shell of Glyptodont 242
Pteranodon, Climbing for a Swoop 250
Finding the Eobasileus 256
The Eobasileus or Loxolophodon 256
The American Mastodon 270
The Siberian Mammoth 270
The Mammoth Tusk He Found 276
Uncovering a Frozen Mammoth 276
Finding the Eohippus 292
Eohippus, the Four-Toed Horse 292
Finding the Mesohippus 294
Mesohippus, the Three-Toed Horse 294
Smilodon, the Sabre-Tooth Tiger 302
Museum Camp in Wyoming Bad Lands 308
The Largest of the Titanotheres 308
Herd Crossing Red Deer River, Alberta 312
Museum Boat Camp on Red Deer River 312
Opening (Rear Tent) to Moropus Quarry 322
Inside the Moropus Quarry, Agate, Neb. 322
The Dryptosaurus, a Giant Carnivorous Reptile . . . 328
Unearthing a Saurolophus Skeleton 330
Unearthing a Diplodocus Hind Limb 330
Brontosaurus in his Native Swamp 332
Trachodon, a Duck-Billed Dinosaur 338
A Brachiosaur, Largest of All Land Creatures 346

THE MONSTER-HUNTERS

THE MONSTER-HUNTERS

CHAPTER I

KILLING THE LAST DRAGON

" FATHER, I want a dragon! "

The shrewd old merchant lowered the evening newspaper he was diligently reading, and looked over it at his son.

" All right, my boy," he said with a smile; " go ahead and get one."

" But I mean a real dragon! "

" About how big, Perry? "

" I'd like one about a hundred feet long, if I could find it."

" You don't want much," was his father's half-humorous reply, as he folded the newspaper so that he could read the next column with more ease. After a few moments, pursuing the subject, he continued,

"Is there any particular breed of dragon that you're after? "

" What I really want," the boy answered, " is one of those spiny ones—the sort Uncle George discovered out West."

The keen old financier looked thoughtful, then deliberately took off his reading-glasses, laid down the paper and turned to the boy.

"You're talking about fossil monsters, then," he said.

"Yes, Father, that's it exactly. And I do hope you'll let me do it!"

The boy's earnestness was evident, and he knew he could count on his father, for they had always been close friends.

"Let you do what?" the merchant queried in response. "I suppose all this preamble about a dragon means that you have some crazy notion in your head. Come along, son, tell me all about it."

This was the chance for which Perry Hunt had long been waiting, and he snatched eagerly at it.

"There's a chap I know," he sputtered, "who's going 'way out to the South Dakota Bad Lands to prospect for fossils. He's a freshman at Princeton, and it's their expedition. He told me he was sure he would be able to take me along, if I could fix things up at my end. I've always been wild to go fossil-hunting, Father, and this is a real chance. Can't I go?"

Mr. Hunt tapped the ash from the end of his cigar and looked inquiringly at his son.

"What in thunder do you know about fossils?" he asked, abruptly.

Perry colored. He was inclined to be shy about the things for which he really cared, and he had never before talked to his father about his hobby. The great secret of his boyhood had been a passionate interest in the strange creatures which used to wander over the earth, millions of years before the first man. Mr. Hunt had a sharp, quizzical tongue, and Perry was afraid of being misunderstood and ridiculed. Now, however, the time for concealment was past and he spoke up valiantly.

"I've read nearly everything I could get hold of, along that line," he replied, "and I've hung around our little Museum a lot. The curators and everybody have been bully to me down there, and they've let me putter about in the workshops. I really have learned quite a bit about fossils, Father, and Mr. Cavalier has shown me how to draw. I've drawn heaps!"

"The deuce you have!" the other commented. "Got any of those drawings still?"

The boy nodded.

" Let me see them, Perry—that is, if you don't mind."

Still a little flushed with confusion, the boy went to his own room and came back a few minutes later with a sketch-book. His father turned over the pages. The drawings covered a period of several years, and though the first were crude, the later ones were quite well done. Those dated during the last year showed the results of real study. There was no doubting that the lad had picked up a fair knowledge of gross anatomy in following his hobby.

Most of the pictures were copies from illustrations in scientific books or were drawn from models in the Museum. But there were a few, here and there, that were just fancy, idle sketches drawn for amusement's sake. Over one of these —a picture-book dragon with scales and a snaky tail—the old merchant paused, smiling. Several minutes elapsed before he turned the page. He went through the book twice without saying a word. At last he spoke.

" In the second drawer from the bottom, in that cabinet," he said, pointing to an old cupboard which Perry had never seen unlocked, and at the same time handing a key to the boy, " you will find a large book bound in faded green leather. Bring it here."

Although rebuffed by his failure to get a direct answer to his appeal for permission to go on the expedition, Perry took the key. He felt that, in some way, his present quest was connected with the question he had raised, and as he unlocked the cupboard, the boy wondered. In the drawer he found the faded book, with its cover of green Russian leather all dry and crumbling to the touch, and brought it to his father. Still without comment, the old merchant slowly untied the string that held the covers of the ancient book together, and opening it carefully, turned to the first page.

There, drawn with childish detail, was a picture of a dragon such as men in the Middle Ages believed that creature really to be, with two legs armed with claws, spiked wings, a long powerful tail, scales, and a ferocious-looking head with jaws wide open, disclosing pointed teeth, while from the throat, flames and smoke were pouring in volumes.

The boy looked up.

" Why, Father— " he began.

With a faint smile, the old merchant pointed to the date at the bottom of the drawing, its pencil marks so faint as to be almost indistinguishable.

"I must have been nine years old, then," he said. "I can remember well when I drew that beast. Father had a queer old Latin book, a sort of mediæval natural history, and it gave a drawing of every supposedly known beast in the world. This was one of them. At that time I believed that a dragon was as real as a lion or an elephant. To tell you the truth, Perry, I've never quite got away from the feeling of that old book of Aldrovandus, his beasts were so much a part of my childhood. When I was a youngster I was convinced that any adventurous boy could find plenty of dragons like this one, if he only went to the right place to look for them."

"And did the book tell you where to look?"

"It did, exactly. It described a region south of Ethiopicus—that was Upper Egypt—where a vast region was uninhabited by men because of the presence of three or four of these monsters. I was determined to go there some day and kill a dragon."

"And you took it all in, Father?"

"Why not? Only a couple of years before, Stanley rescued Livingstone in the first great exploration across Africa. The region that Aldrovandus wrote about, north of the Victoria Nyassa, in my day was still an absolutely unexplored territory. Anything might be there, even dragons."

"I should think you'd have known there weren't any real dragons," protested Perry, with the cocksureness of a boy.

"I had sense enough to know that I didn't know it all," said his father with a snort, emphasizing the personal pronoun. "Why even in your lifetime, boy, scientists have found an animal that no one had ever heard of before, still living in the African forests."

"What was that, Father?"

"The okapi, a sort of giraffe with dagger-shaped horns and striped on the legs something like a zebra. And that discovery is a good example of the sort of thing I mean.

"Naturalists once used to laugh at some of the old pictures on the Egyptian temples which showed a beast like a cross between an antelope and a zebra, with stripes. One of the heads of the god Set, too, was unlike any animal known in the world. But when, in 1901, the first okapi was caught by Sir H. H. Johnstone in the Semliki forest in Uganda, it was found that the old Egyptians of three thousand years ago were right, and that the modern naturalists were wrong in their disbelief. So you see, Perry, lots of things are possible that one would never expect."

"But a dragon, Father! It's such a made-up sort of beast—wings, teeth, snake's tail and all that sort of thing!"

"Don't trouble yourself about that," his father answered, "there are plenty of dragons with wings, teeth and a snake's tail, and, what's more, Science calls them dragons. *Draco volans,* the flying dragon, that's their real name, my boy. But they are all small, none of them more than ten inches in length, including the tail."

"Never heard of them," said Perry, incredulously.

"If you don't want me to think you a born idiot," his father answered sharply, "don't let me catch you taking that tone, suggesting that a thing doesn't exist because you don't know about it. There are a few million things that you don't know now, and when you get older and have more sense, you'll find a few million more things that you don't know."

"I'm sorry, Father," the boy said, in a milder tone. "I didn't mean to be uppish. Won't you tell me about the 'flying dragon'?"

"They are small lizards," his father answered, "living throughout Malasia and in Madagascar. They have a long lizard-like tail, four inches in length, a fierce-looking head with a frill around it to make them look ferocious, and the skin from the body to the four legs is stretched out like that of a flying squirrel. If they were bigger, they could play the dragon's part well enough. But, as I was saying, in my young days there wasn't any good reason why I should disbelieve the dragon. Aldrovandus said he possessed the skin of one, and that seemed good enough proof for me. Yet I think I would have said less about my belief in dragons, if I had any idea where it would land me. I don't think I ever told you the story of my fight with a dragon, did I?"

"A real sure-enough fight?"

"An actual fight with an actual dragon," said his father, with a smile.

"But how could you?"

"I did have one, just the same."

"I don't understand you a bit. Won't you tell the story, Father?"

Without answering directly, the old merchant turned over page after page of the drawing-book, its pages browned and the pencil-sketches faded with age, but all filled with dragons—every kind of dragon that the boy of forty years ago had been able to discover or invent. At last he stopped before a picture of a weird beast, that looked like a cross between a man-eating tiger, a Chinese dragon, an alligator, and a boa-constrictor, which was breathing out fire and smoke as though it had a gas-works in its inside. In front of the dragon was represented a small boy, about as tall as the dragon's claw was long, and the youngster was sticking a knife as big as himself into the monster's breast. In the near distance, quite out of perspective, were a number of people running away in terror.

"There," the old merchant said, with a mixture of amusement and complaisance, "that was the beast I fought. Isn't that a sure-enough dragon for you?"

After his former rebuke, Perry was a little dubious about seeming too skeptical, but he could not help saying:

"Well, that's hardly a photograph, is it, after all?"

"No," his father answered, "it's not. I suppose I'll have to admit that it is partly imaginative. But the dragon I fought was something like that."

"You've got me guessing," the boy admitted. "Won't you tell me the story, Father? It ought to be a great yarn."

"I suppose I'll have to," the other agreed, "since I've led you on so far." He reached out for a new cigar, clipped it, lighted it, and when sure that it was drawing properly, leant back in his chair and began.

"I suppose I was about thirteen years old," he said reminiscently, "when this famous combat was held. At that time my folks were living at a small place called Proctor's Cave, on the Green River, in Kentucky, not far from the Mammoth Cave. As you probably know, Perry, that whole section is just riddled with caves, made by the gradual dissolving of the limestone rock through the action of underground rivers. Most of them, too, are full of stalactites.

"Proctor's Cave, right on the river, was quite a growing town, and though it was small, there was a right smart heap of children in proportion to its size. About thirty-five boys around my age went to the school there. I can remember the number because we were divided into two gangs. Ours had fifteen members and the other had twenty."

"I suppose you were 'boss' of your gang, Father?"

"I was the 'War-Chief,'" was the smiling response. "Our gang was called the 'Indians' and the others were the 'Pioneers.' You can see that it was natural for us always to be ready for a fight. Everything was taken in good part, though, until one day we caught one of the chaps in the other gang and scalped him."

"You didn't really scalp him!"

"No, not exactly. There were limits, Perry, even in my young days. But the victim thought it was genuine. That's where the trouble came in."

"How was it, Father?" pleaded the boy, fairly wriggling with excitement.

"As I remember," the old merchant continued, musingly, "a week or so before, the 'Pioneers' had got hold of one of our gang and had given him the 'third degree.' They said that if he was an 'Indian' he ought to look like one. To make sure of it, they gave him a coat of war-paint with some stuff they got from a drug store, and the war-paint wouldn't wash off. It wouldn't even scrape off. It was nearly a month before it wore off.

"Our turn came when this 'Pioneer' was delivered into our hands. We told him we were going to have our revenge, and I tell you, he was scared stiff! We brought the youngster to our own private 'Indian' cave, and there we discussed tortures, so that he could hear what was being said. Each one of us had some kind of torment more excruciating than the last."

"It sure must have been blood-curdling to the chap who was listening," put in Perry, with an appreciative grin.

"I haven't a doubt of it," his father agreed. "Finally, we came to a formal decision and informed the victim that he was to be scalped alive. You should have heard him yell! However, yelling didn't do any good, for the cave was half a mile from town and a couple of hundred feet underground, and he would have had to hoot like a Mississippi River steamboat in order to be heard at all. So we went ahead and scalped him."

"How, Father?" queried the boy, eagerly.

"We made quite a ceremony of it," was the reply. "First of all, we gathered a lot of stinging nettles that grew outside the cave and mashed them up with vinegar in an old tin can. The vinegar, you know, holds the sting; it even seems to make it stronger. Then, in an old iron pot we had, we mixed up a lot of corn syrup and red ink—we always used that in our initiation pow-wow, and it certainly did look and feel like blood.

"Next we blindfolded the unfortunate 'Pioneer.' We dipped a piece of string in the nettle juice and tied it loosely round his head, and sprinkled his head with the nettle vinegar, knowing that it would only take a minute or two before it began to sting. Then we took his cap, dipped it into the red ink and syrup, and clapped it—not boiling, but still fairly hot—on his head. At the same instant, one of the 'braves' stuck a bit of stick in a loop of the nettle-soaked string and twisted it tight, also running his thumbnail around, as if it were a knife. The cap and the blindfold were then yanked off together.

"The youngster gave just one look. He saw the cap, all blood, in the other fellow's hand, and jumped to the conclusion that it was his scalp. The tight string around his forehead felt like a cut and the nettles began to sting like blazes. He put his hand up to his head, felt the sticky wetness, looked at his hand, all red, let out an ear-piercing screech, and started to run. That was forty years ago, but I believe he'd have been running yet, if he hadn't bumped into some one on the road.

" 'Help! I've been scalped!' he yelled.

"I reckon he must have given the farmer a jolt, for while we were a good way from the Indian country, still there were plenty of 'hostiles' about, and any day there might be a raid. This was about the time of the Little Big Horn Massacre."

"You mean Custer's last stand?"

"Yes. So, you see, the farmer had reason enough to be startled. As soon as he had a good look at the boy, though, he saw that the youngster was only frightened. He cut the nettle string from the lad's head, washed off in the nearest brook as much of the red ink and corn syrup as he could, and started for town.

"I thought we were in for real trouble, but to do that boy's father plain justice, I'll admit he was a good sport. Though he was as mad as a hornet, he was fair. He gave me a good tongue-lashing, and told me—which was true—that I ought to have had more sense, as the boy might have been killed with fright. He repeated to me the old story of the man who was ordered to be beheaded, and who died when a cup of cold water was dashed on his neck in joke. Still, he said it was a boys' row, he remembered when he was a boy himself, and it wasn't his business to interfere. He added that he hoped I would get my medicine from the other gang, twice as hot as I had given it."

"That was fair enough, Father."

"Indeed it was. But even he was satisfied with what I got in return."

"What was it?"

The old merchant rolled up his sleeve to the shoulder, and showed his son a white scar running down almost the whole length of the upper arm. The wound had evidently been a deep one.

"I got that from the dragon," he said.

"You'd a real fight, then?" ejaculated Perry, surprised at this evidence of an actual encounter.

"I was laid up for nearly a month," was the reply. "But they didn't build any statues to me as they did to St. George, when he slew the dragon, and no one gave me a triumph, as the people of Rome did to Regulus over his combat with a monster."

" I never heard of the Regulus story," Perry said.

" It wasn't a story," his father corrected him, " it was a real fight, like mine. Or at least it was said to be a real fight. Regulus sent home the skin of his dragon, and it was carried before him in his triumph."

" But I thought all those dragon fights were just fairy tales! "

" Most of them are," his father answered. " With the exception of mine, I think Regulus' fight with the dragon is the only one that is supposed to be attested by history. Do you want to hear about it? "

" I'd rather hear yours," Perry replied.

" I'll come to that presently," the merchant assured him, " and the story of Regulus may put you in the right frame of mind to hear about my prowess.

" Marcus Atillius Regulus, almost the only historical character to have fought with a dragon," he began, " bore one of the noblest names in Rome. You may have learned in school, Perry, how he ravaged the shores of Africa and brought Carthage into subjection, but that, at the last moment, he was defeated. As a prisoner, he was sent by Carthage on an embassy to make peace, upon his own honorable promise to return to his foes to die by torture unless his embassy of peace was successful. On arriving at Rome, Regulus gave the message with which he had been entrusted by the Carthaginians, but ended with a patriotic appeal to Rome not to let their affection and loyalty to him overtop their honor.

"'Let the prisoners be left to perish unheeded,' he said, 'let war go on till Carthage be subdued.' His counsel prevailed, the offers of peace were refused, and Regulus returned voluntarily to Carthage. The Romans have enshrined the name of Regulus high in the pages of honor, but the Carthaginians had little understanding of valor and good faith. They cut off his eyelids, placed him in a barrel spiked with nails, knocked the head of the barrel out and fastened him there so that he was immovable. Even his hands were tied. Then they exposed him, naked, to the glare of an African sun, to die by the slow agonies of thirst, fever, the scorch of the sun upon the unprotected eyeballs, and the stinging insects of the desert."

"But Rome got back at them?"

"Yes," his father answered, "Scipio Africanus captured Carthage, leveled every house to ground, sowed salt on the ruins and in the name of Rome forbade any building to be erected there again. But I've told you the story of Regulus, son, so that you might see that such a man was scarcely likely to invent a story about a dragon to help his reputation."

"Where did he fight the dragon? In Africa, too?"

"Not very far from Carthage. It was in the year 256 B. C., after the first Punic War had been raging for eight years, that Regulus captured the city of Utica, about sixty miles northwest of Carthage, near the modern city of Tunis. Between Utica and Carthage flowed a river, then called the Bagrada, difficult to cross except at one ford. When Regulus and his soldiers came to this ford, they found the passage disputed by an enormous dragon, one hundred and twenty feet long."

"A real monster!" ejaculated the boy.

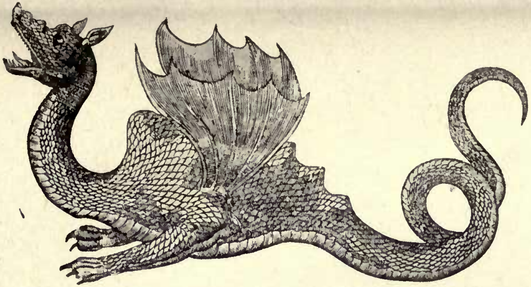
"Wasn't he? And, so the old Roman historian tells, the skin of the monster was so tough that the Romans could not pierce his hide. Several times Regulus led the attack upon the dragon, but each time the beast killed and devoured several of the soldiers. At last Regulus brought up the artillery, the ballistæ and catapults, and bombarded the dragon. Supported by the artillery, Regulus plunged across the river alone, fought the dragon single-handed and slit his throat. The skin was carried to Rome and graced Regulus' triumph."

"What do you suppose it really was?" queried the boy.

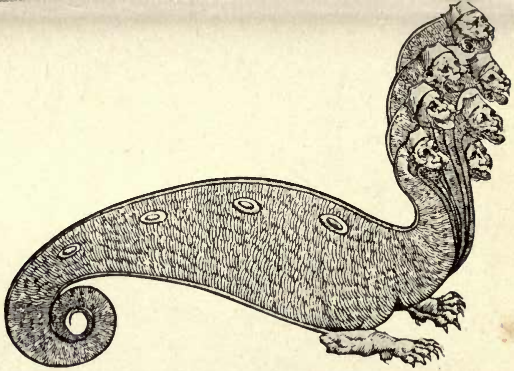
"I think," his father answered, "it must have been a huge crocodile. That would explain why the Roman swords could not pierce the so-called dragon's hide, and why the combat seems to have taken place at the ford of a river."

"But a hundred and twenty feet long, Father!"

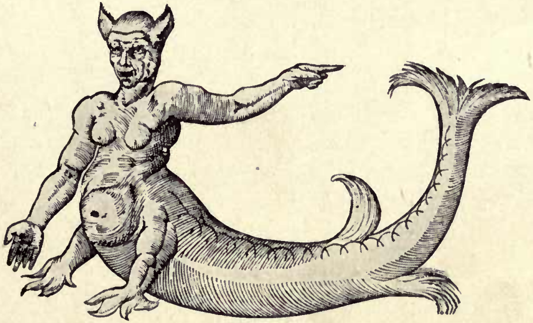
"Possibly that was worked out from the skeleton. In those days it would be quite easy to put the backbones of several animals together. That trick was done only thirty years ago, when Dr. Albert Koch collected the bones of two or three Zeuglodons or primitive whales and made a monster which he called 'Hydrarchus, the Water King,' and which he exhibited all over Europe. Regulus' dragon, carried in his triumph, might have been something of the kind. As for the Zeuglodons, I've often thought that the discovery of skeletons of antediluvian beasts might have been



DRAGON SLAIN BY REGULUS.



SCYLLA OF THE SEVEN HEADS.



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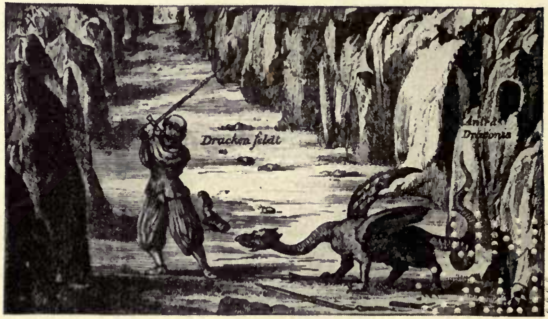

Dracken feldt
Antra Draconis

THE DRAGON OF THE DRACHENFELS.

MONSTERS THOUGHT REAL BY THE ANCIENTS.

These pictures are taken from professedly scientific works of the Middle Ages.

one of the reasons for popular belief in dragons."

"Was yours one of that kind?"

"Mine," said his father, with a twinkle in his eye, "was a real dragon."

"But it couldn't be, Father. You said the other gang had something to do with it!"

"They unearthed him from his lair," the other answered. "I suppose I'll have to tell you just how it all happened, Perry, and then you'll see if you don't think I deserve a triumph, just as much as Regulus did!"

The boy waited expectantly, and, in a moment, his father continued:

"All that summer, the summer after the scalping, I was on the lookout for squalls, but nothing happened. The 'Pioneers' didn't seem to be trying to get their revenge, or if they were trying, we were too much on the alert. I afterwards found out that they had been laying plans all summer, but that none of them had worked. It was not until the autumn that their plot came to a head.

"One evening, late in October, when it was already beginning to get dark early, I was delayed in going to the cave. It was one of the regular evenings for a meeting and we had something very important to do—I forget what, now—so I was running at a good clip. Just as I struck the little hidden path that diverged toward the cave, I heard the fellows talking loudly, in excited tones. Wondering what could have happened, for it was one of the rules always to approach the hiding place in silence, I quickened my run still more, and in a minute or two, burst upon the fellows who were gathered in a clump not far from the entrance to the cave. The second I appeared, three or four of them shouted, in a breath:

"'Chief! There's a dragon in the cave!'

"I told you, Perry, that I'd always done a lot of talking about dragons, and this ought to have made me suspicious. But I'd been reading, a day or two before, about Regulus, and all my early interest had been suddenly awakened. As I look back on it now, I don't think doubt even entered my mind. The gang was evidently so scared that the scare got into my bones, too.

"I found out that one of the smallest of the boys had come early and gone into the cave, and that he had rushed out again, screaming to another fellow, who was just coming up the path, that in the cave there was a huge dragon, with a shining tail, breathing out flames. He said it had roared at him and that it was as long as a barge.

" The older boy, he was ' Chief Brave ' and second in command of the gang, had laughed at him, picked up a chunk of wood for a club, and started for the opening. Half-way down, he heard the growling of some beast and his courage oozed out. Without going in to see what it was, he bolted out again as promptly as the little lad had done. He was afraid the dragon would follow him, but nothing appeared. None of the rest of the gang had volunteered. They waited for me to show up, and tell them what to do. It wasn't that I was any bigger, son, but, after all, I was ' War Chief ' and it was my part to lead them on.

" If there had only been the little fellow's story," the old merchant continued, " I don't think I'd have felt the same way about it. But the ' Chief Brave ' was not only a plucky sort, but I depended a good deal on his judgment. As I saw it, there was only one thing to do, and that was—to face the monster and find out what could be done. If I could really slay a dragon, I thought, I should go down in history with Siegfried and Beowulf and all the rest of them. So I loaded an old horse pistol that we had, and, more for show than anything else, stuck a bowie knife in my belt and started into the tunnel-like opening of the cave, the gang following cautiously behind.

"I tell you, my boy, it was mighty uncomfortable, creeping through that long, black passage, hearing nothing but the hard breathing of the frightened fellows behind. And when, about halfway down, the silence was suddenly broken by a savage, whining snarl, I had a feeling that ice was being rubbed down my spine. It wasn't quite my idea of a dragon's roar, it was worse, there was such an evil relish in the sound that the flesh under my hair just crawled.

"If I had been alone, I'd have done the same thing as the others did, I'd have turned tail and got out of that place as quickly as I could. But the gang was behind me. I was afraid, afraid to death, of that snarl in front, but the fear of ridicule was even stronger. I would rather be clawed to death by a dragon than be guyed as a coward. So, gripping the pistol closer, I crawled forward.

"I think I could have walked with more confidence, but on hands and knees, it was ghastly. I could put my hands out without difficulty, but the fear sent a spasm into my knees so that it was hard to move them. Still, foot by foot, ever hearing that malignant whine grow closer, I groped my way through the opening. It was only fifty feet long, but it seemed interminable. At last I saw the light and, with a huge sense of relief, leaped from the narrow tunnel into the cave itself.

" I leaped almost into the monster's jaws. For, facing the mouth of the tunnel, not six paces away, was the dragon, growling and snapping, while every few seconds he followed the clash of the gnashing teeth with that long whining snarl that had so scared me during that endless crawl in the dark."

" What did he look like, Father? "

" In the half-dusk of the cave he looked fearful! In my excitement he looked every inch a dragon. The front part of him was like a wolverine, and his body all glittered with silver scales. Behind him he dragged a thick tail, something like an alligator's, only round, all covered with shiny scales."

" How about the fire-breathing business? "

" I didn't stop to notice. I was too excited and too frightened to bother myself with thinking what breed of dragon he was. I aimed the old pistol and fired. The 'kick' of it nearly broke my wrist. At the same instant, the dragon lifted himself heavily, dragging his hinder part, and launched full at me. I shrank back, flat against the wall of the cave, and his spring fell short. The hot froth and blood on his fangs slathered on my coat, and I knew that the monster was badly hurt. There was little room to dodge in that cave, but I jumped sideways.

"He turned jerkily, and I saw that his huge tail was injured. For the first time, my spirits rose. It was his tail I had feared. I had been afraid that he would lash out with it, crushing me to pieces. If, however, he were already hurt, I might be able to dodge about him, and get the best of him yet. But he could move quicker than I thought.

"Before I realized it, he was on me. Again he sprang, with that curious dragging of his hinder parts as though they were paralyzed. I had no room to dodge away, for the wall of the cave was behind me. In desperation, I pulled out my bowie knife. Before I could lunge, however, a paw with curved claws like Turkish daggers flashed out and laid my left arm open to the bone.

"Reeling from pain and the loss of blood, I struck forward with the knife. I hit some kind of a bone, I remember, then felt the curious sense of the blade piercing through living flesh. Again the monster reared. I swayed back, too far gone to move my feet, which seemed fastened to the door of the cave. But as I stared, almost fascinated, into the green light of the creature's eyes, I saw a glaze pass over them. He reared, wavered and fell over in a heap. Almost I collapsed upon him myself, but as I tottered, one of the fellows sprang out from the mouth of the cave and caught me. He snatched the bowie to give another blow, but the dragon never moved again. My knife had reached the heart."

CHAPTER II

THE MONSTERS THAT NEVER WERE

"BUT, Father," cried Perry, "you haven't told me what the dragon really was!"

"I didn't know, myself, for a few minutes," was the reply. "I dropped in my tracks, right there. A couple of the fellows picked me up, though, as soon as I began to feel a little less faint, and the three of us, waiting until we were sure that the monster was quite dead, went up close to him. I had noticed, in a dim kind of way, that the dragon's scales looked queer and that some of them had been scraped off on the floor of the cave. But when we got right up to him, what do you suppose we found those scales were?"

"I haven't the ghost of an idea," the boy answered expectantly.

"They were made of the silver paper that comes wrapped around bars of chocolate."

"What?"

"Just plain silver paper."

"It was the other gang, then—" suggested Perry, seeing a clue.

"That's just what it was, the other gang."

"Then it was a fake dragon!" cried the boy, disappointed. "You said it was alive!"

"Does my arm look as if the beast hadn't been alive?" retorted his father. "It was a mighty lucky thing for me it wasn't any more alive than I found it!"

"What was the dragon, really, Father?" the lad persisted.

"It was a lynx, or bob-cat," was the reply. "The 'Pioneers' had trapped the beast in the woods and brought it to our cave, with the trap still fastened to the bob-cat's hind foot. The other hind paw had been tied to a heavy log.

"Then the fellows had gone to work and made a long tail of sacking, stuffed with shavings, and fastened this tail tightly around the lynx's haunches, so that it would trail behind. They'd dusted it all over with mustard and red pepper, so that the animal wouldn't chew at it and tear it off. After that, they chucked a couple of pailfuls of carpenter's glue, almost boiling hot, over the beast, head, tail and all, and stuck the silver paper on, when the glue was wet. I don't wonder the bob-cat was savage!"

"They must have had a picnic doing it!" exclaimed Perry.

"I've thought of that many times since," his father agreed. "But they made a good job of it. They even took the trouble to cut all the silver paper in shapes so that it would look like real scales."

"They took an awful chance, though, Father. Suppose the tail had come off? What would have happened to you?"

"I don't think the tail saved me," the other answered. "After all, the bob-cat was badly crippled, with both hind legs out of commission. You see, Perry, a lynx leaps for his prey, grips with teeth and fore-claws and tears with the hind claws. With the trap on one foot and a log on the other, the other gang knew I was fairly safe. So far, they had been right enough. Where they went wrong was in not knowing the animal. They all thought the creature was just a big domestic pussy that had got a bit wild running around in the woods. It was a true lynx, though, and a big one."

"Did you send the skin home for a 'triumph '?" the boy quickly asked. "Where is it?"

"When that combination of glue and silver paper got thoroughly dry," the old merchant commented, "there wasn't much value to the skin. We kept it as a trophy, of course, but we kept it in the cave. For all I know, it's there yet. If you're so keen to find a dragon, Perry, I'll tell you exactly where to go for it."

"I'm afraid even our own local Museum wouldn't take it," the boy objected, smiling.

"Maybe they wouldn't, but, so far as I know, it's the only genuine dragon that has put up a genuine fight for the last couple of thousand years. So, my son, if you ever do go dragon-hunting, don't forget that your father was the last of all the champions of valor who fought and defeated a dragon single-handed."

"Then you really will let me go dragon-hunting with the Princeton crowd?" Perry interjected, returning to his first plea.

"I've been thinking about it," his father answered meditatively, "and I don't think I will. Wait a bit—" he continued, as he saw the bitter disappointment in the lad's face, "I haven't finished. I don't say that I won't let you go on a search for fossils some time, but I don't think this Princeton expedition is the right thing for you. And I'll tell you why."

"I'm sure it would," burst out Perry.

"I'll tell you why," his father said again, with that calm repetition from which the boy knew of old there was no appeal. "You would simply go as a helper, you wouldn't have any real share in the plan, and you would only have a lot of dirty and laborious work to do without any real chance to learn."

"But, Father," interrupted the boy. He caught the glance of reproof and stopped.

"If you interrupt me again, Perry, I shall not say what I was going to say—and you'll be the loser."

Distinctly set back, Perry straightened himself and sat still. After a pause, his father continued:

"That book of drawings you showed me, son, which covered several years of work, looks to me like fairly good evidence that your interest is genuine. I want to be sure that it's not just a fad, that you'll tire of in a month or two."

"Oh, it isn't, Father!"

"You'd say that, Perry, of course, in any case. Just the same I rather think you mean it. Now, what I want to say is this: Since you really so seem to have an interest in these dragon-forms of old times, and as I suppose you've inherited it, to a certain extent, it seems to me that I ought to give you a chance to find out if that's the sort of thing you want to take up for your life-work.

" So far, I haven't made any special plans for your future, Perry, because I haven't known just how your desires would run. I wanted to see which way the cat would jump, first. Do you really think that you would like to give your whole time to paleontology, or do you want to keep it as a hobby? Answer carefully, now, because quite a stretch of your life may hang on the reply."

Perry thought for a minute or two, then answered slowly:

" I think I'd rather try to find the monsters that no one has ever seen. I'd like to dig up secrets in all the queer corners of the world. I'd rather find a new kind of creature, such as no one had even dreamt of before, than be a multi-millionaire!"

" Very good," his father answered, " if that's your feeling, my boy, you shall have your chance and you shall have it in the best way possible. I suppose you know that your Uncle George is going to take out an expedition for the American Museum of Natural History in New York, this year?"

"No, Father, I didn't know it," Perry replied. "Out West?"

"I think not," his father answered. "If I remember rightly, when he was here a month or two ago, he said something about going to Egypt."

"And I could go?"

"That depends on a number of things," the old merchant answered, guardedly. "Still, there's a possibility that I might persuade him to take you along. You see, Perry, if I were to pay for your part of the expenses out of my pocket, the New York Museum wouldn't lose anything and perhaps you might do something to help."

"But that would cost a heap, Father."

The financier smiled.

"You don't imagine that you're not an expense, do you?" he queried. "But I don't mind footing the bill for anything that will give you a real start in the world at the kind of work you want to do. I don't believe in wasting money on things you don't need—that's why I wouldn't buy you that two-cylinder motorcycle—but I'll keep my wallet open, any time that you want something that is really worth while. Now trot along, son, and I'll write to Uncle George and see what he thinks about the whole project."

"Thanks ever and ever and ever so much, Father," the boy said, heartily, getting up from his chair, "and I do hope I can go! Oh, and say, Father," he continued, pointing to the faded green book which lay on the table, "can I take this along and go over it a bit more thoroughly? I'll be ever so careful."

"All right, son," the other answered, "but don't take what you see in there, literally. There are enough weird creatures in that book to make the fortunes of a dozen Barnums, if they could ever be found and put under a circus tent. Watch out that they don't give you a nightmare!"

"I've dreamt about fossils, heaps and heaps of times, Father," said Perry grinning, as he opened the door. "Some of these days, I'm going to make all those dreams come real, too!"

As, in his own room, the boy turned over the pages of that book of his father's childhood, the fascination of the monsters of the past crept over him more and more. There was no doubt that Perry had inherited this interest, for every leaf of the volume before him was indelibily stamped with the eagerness of a boy absorbed in the subject.

Although Perry was more or less familiar with the three-horned Triceratops, the twenty-ton Brontosaurus and the gaunt-winged Pterodactyl, the still stranger creatures in the faded green book were unknown to him. The Roc, the Griffin, the Chimæra, the Phœnix, the Basilisk—they were like characters in a fairy tale. Still, as he looked at the pictures of them limned by the boy of forty years ago, a strange feeling came over Perry that perhaps—in some remote corner of the world—these creatures might be living still.

There was an air of expectant reality in their pose, and, not only had his father drawn them in the book, but he had also—in a round immature scrawl—copied upon the opposite page the words of the old naturalists who claimed to have seen the monsters with their own eyes.

One page showed (in red and yellow chalk) a blazing fire in an Egyptian temple courtyard, the flames of which shot higher than the pylons of the temple gateway. Full in the center of the flames, wearing a peaceful look as though enjoying the process of being burned alive, was a large bird, with a crest of yellow feathers on its head, like an imperial crown. Under the picture was written "The Phœnix," and on the page opposite, the story read:

"Sir Thomas Browne says: 'There is but one Phœnix in all the world, which after many hundred years burns herself, and from the ashes thereof riseth up another, is a conceit (belief) of great antiquity, not only delivered by humane (learned) writers but frequently expressed by holy writers.'"

Perry's father—then ten years old, had added:

"Swan says this can't be right because the animals had to go two by two into the Ark, and if there was only one Phœnix, Noah wouldn't have let him in till he got another, and as there wasn't another to get, he had to stay out, and everything that stayed out, died. For feathers of the Phœnix, see next page."

Wondering what in the wide world the feathers of the Phœnix could be like, Perry turned eagerly to the next page. There his father had drawn two long feathers and under them had written:

"Feathers of the Phœnix. In Tradescant's Museum, in Italy."

"But," said Perry aloud, "I know what those feathers are! They're from the Japanese Longtailed Fowl! I don't wonder that those old fellows thought a feather eight feet long must come from a queer kind of bird! I think I'd do some guessing myself!"

Old Sir John de Mandeville, that joyous traveler of the fourteenth century, was responsible for the next weird beast. This was a combination of an eagle and a lion. Perry's father had evidently drawn it from a crest and labeled it "The Griffin," while opposite was de Mandeville's description:

"Some men say that they have the body upward of an eagle and beneath, of a lion; and that is true. But one Griffin has a greater body and is stronger than ten lions, and greater and stronger than a hundred eagles."

"I should think," commented Perry to himself, "Father could have seen that this was a fake, because a Griffin with a body as heavy as ten lions would have to have wings the size of an armored aëroplane."

The boy had hardly framed the words, when turning the page, he saw some birds pictured, which made the largest modern flying machine seem small. In the distance was one of these huge birds flying away with an elephant in its beak.

Near by, a man in turban and robe was tying himself to the claw of one of the birds, the creature's leg being as thick as the trunk of a big tree. This was "The Roc," and Perry's father had copied out in his smallest handwriting, all that happened to Sindbad the Sailor and the Third Calendar in the land of the Roc, as told in the Arabian Nights..

"I suppose," mused Perry, "the Roc is just the Æpyornis exaggerated. After all, it's only the other day that somebody found an Æpyornis egg bobbing up and down on the waves off Madagascar after a hurricane and that egg was nearly seven times as big as an ostrich egg. You can't blame a fellow in Madagascar several centuries ago figuring that a bird to lay an egg like that must be seven times as tall as an ostrich. My eye, wouldn't a bird over fifty feet high be a bogey! And yet they told me down at the Museum that an Æpyornis was really only about eleven feet high."

The Basilisk or Cockatrice was the next wonder that struck the boy's gaze. Evidently his father had found some difficulty in securing a picture of the creature, for under the fantastic drawing were the words:

"The Basilisk. This one I made up."

The monster resembled a serpent walking on its tail, in grand and imposing style, with two searchlights for eyes. On the opposite page was a quotation from John Swan, the author of the curious old book "Speculum Mundi" (A Mirror of the World), which was written in the first half of the seventeenth century. It read:

"The Cockatrice is the king of Serpents, not for his magnitude or greatness, but for his stately pace and magnanimous mind. Among all living creatures there is none perisheth sooner by the poyson of a Cockatrice than a man; for with his sight he killeth him. His hissing is likewise said to be bad, in regard that it blasteth trees, killeth birds, etc., by poysoning the aire."

Perry turned over page after page. He saw the picture of the Humma, the bird without feet, that was supposed never to alight on the ground. There was a drawing of the Wak-Wak tree which had beautiful women for fruit. The Chimæra was not forgotten, with its head of a lion, body of a goat, and tail of a serpent.

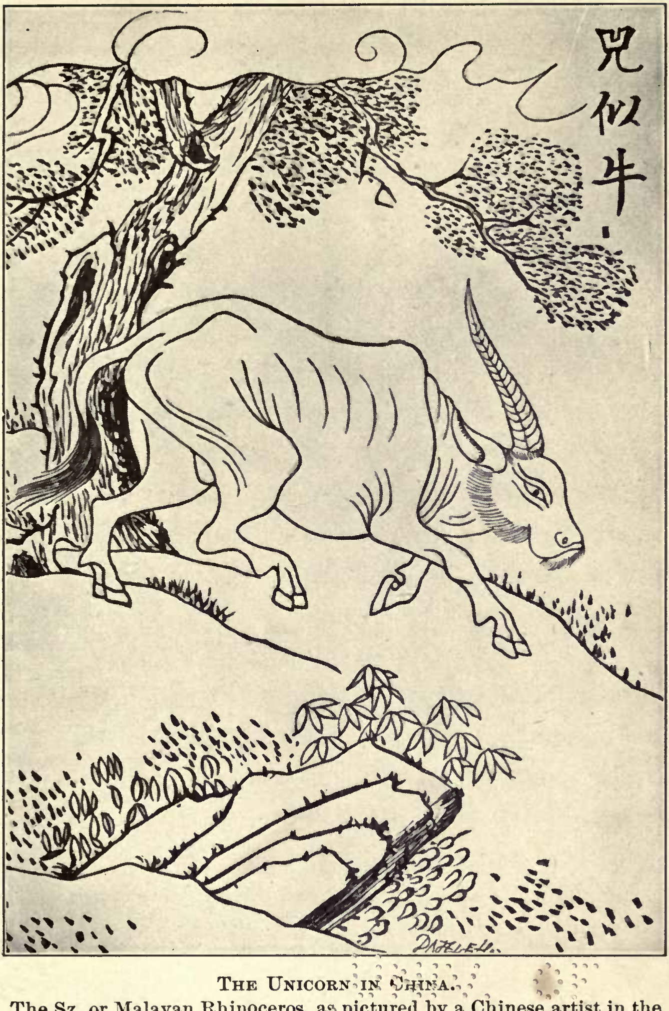
A whole section of the faded green book was given to the monsters who were half men, half beasts. There Perry saw his old friends the Centaurs, and among them Cheiron, "wisest of beasts and men,'' human to the waist, with a horse's body. Pan, playing on his pipes of reed, was sitting on a fallen tree-trunk, while goat-legged Satyrs and Fauns danced to his piping. One particularly creepy picture showed the Gorgons, with writhing poisonous snakes in place of hair, whom, the Greeks believed, it was death to look upon, and none of the monsters that were slain by Hercules, Theseus, and Perseus was forgotten.

Little by little the spell of the old-time wonderland began to creep over Perry. At first these childish drawings of monsters had seemed impossible, but earnest belief in the artist always reveals itself in the picture, and Perry's father, when a boy, had believed in these creatures just as did the ancient Greeks. The spirit of the boy who had fought the lynx, believing it to be a dragon, stirred on those pages and quickened Perry's blood.

At last he came to Unicorns. Page after page of unicorns! The boy read the story of Vertomannus who measured two unicorns that had been presented to the Sultan of Mecca in 1503. He learned how Father Lobo, a missionary, had chased a unicorn in Abyssinia in 1622. He saw the drawings of one-horned asses in China sent to Rome by Grueber, the Jesuit Father, in 1661. From utter disbelief, he passed to doubt, and his doubt received a sudden shock when he read that the Russian naturalist Prjevalsky, in his book "Mongolia," published in 1876, had declared that the orongo, in northern Thibet, sometimes, though rarely, has one horn, though not in the center of the forehead. To this picture there was a note, in his father's handwriting, evidently made after he was grown up. It read:

"Personally, I see no reason to deny the existence of the unicorn. It is quite likely that occasional specimens of a two-horned animal should only have one horn. The narwhal often has two tusks, but generally only one. If the one-tusked narwhal is a natural development, why not a one-horned antelope? The Nepalese unicorn sheep has one horn, and a rhinoceros, as well."

The faded green book dropped into Perry's lap, as he leaned back in his chair, thinking. He recalled the finding of the okapi, only a few years before, and his mind pictured an adventurous trip into Central Thibet where the one-horned orongo of Prjevalsky, the unicorn, might still be found. Deeper and more profound grew the day-dream, more and more real the vision, until, with a start,



THE UNICORN IN CHINA.

The Sz, or Malayan Rhinoceros, as pictured by a Chinese artist in the 'Rh Ya. The Indian Rhinoceros is one-horned. The African square-lipped rhinoceros, or "white rhino," though possessing two horns, one behind the other, has the forward horn so long and powerful as to be truly unicorn-like, though it is nasal and not frontal.

the boy found himself riding at full speed over a coarse-ferned swampy plain.

A warm and steaming mist hung with a dull purple haze over a landscape that seemed familiar, though the boy knew that his eyes had never seen it before. Huge monkey-puzzles thrust their spiny arms into the heavy air, ferns a hundred feet high swayed their livid green tracery against the lowering sky, and here and there a leafless pillar twenty feet in height showed where still remained a struggling horsetail of the weird forests of the age before. Over all hung the red ball of the sun, unable to pierce the low-hung curling wreaths of mist which held the landscape like a bowl.

The glow of the half-obscured sun shone dully on the quaking bog and deepened the shadows of huge black forms, monstrous and menacing, which seemed to be sprawling in the ebon water. To these, there was no shape, although their gross inertness breathed of life. In the distance there was a stir, and Perry, gripping his knees hard upon the Thing he rode, cried aloud in the somber stillness—

"What moved!"

No sound answered. Silence held that flowerless world like a vice, that world that had never heard the song of a bird, but a rumbling vibration in the distance seemed to the boy like some vast leviathan stirring in its sleep. Sure was he that he saw one of those sprawling shapes—which, near by, seemed like stone—heave itself upward and sway a monstrous neck. Straight in his path, one of the murky masses lay, huge as though the earth had spawned a creature vaster than a whale. In panic, Perry forced the Thing that carried him to swerve to the left. As he raced by, the boy forced himself to look at the sprawling bulk. Shapeless and moveless as a block of stone it lay. But when, a second later, some impulse moved the lad to turn his head back to look again, the seeming stone had lurched itself across his path as though to bar any returning way.

With a shiver, the boy's glance turned to the creature that he rode. Its horse-like head and short, coarse mane gave a clue that its light limbs and four spreading toes seemed to deny.

He was nearly thrown to the ground as the Thing shied, then reared, nearly on its haunches. And Perry, looking to see the cause of fear, distinctly saw a quiver run over another monstrous mass immediately before him, like the rippling muscles on the back of a black panther about to spring. He drove his heels into his steed.

" They're waking," he cried hoarsely. " I've only got until the sun goes down! "

Through the humid swamp, spotted with its foul giant brood, that moved, yet never seemed to move, he rode, panic knocking at his ribs. The sinking sun bore down with it his hopes, and as the shadows grew more slanting, the sense of silent life around him grew more threatening. A breeze with a tang of cold in it swept over the swamp and the grip of danger tightened. Now, in the distance, the masses could be seen to drag their slow length along, but near at hand, all was still.

" They're only waiting," he thought, " waiting for the dusk."

From under a huge flat block that bore a fair resemblance to a giant tortoise-shell, a wicked head with lidless green eyes and a turtle beak darted out.

The animal he bestrode leaped as though a snake had struck. And, with the leap came a new thing. Even as the boy watched, the rough mane dwindled and a smooth red-brown coat glinted in the darkening sun. The neck grew longer and more pliant and the swift lumbering gallop gave place to the leaping bounds of some creature that man had never ridden before. Perry's only thought was to go on—on—no matter what he rode, to go on—and out of that swamp where the monstrous reptiles were. But the strangeness of the marvel held him when he saw in the center of the forehead of the Thing, just in front of the ears, a gleam of white like a milk-tooth.

"It's—it's a horn," he muttered.

The sun touched the rim of the horizon. At the same instant, with a sucking sound, the vast bulk of a Diplodocus squirmed up from the slough and poised its ungainly head, as though to see. A leaping Compsognathus loomed black against the sky. Noiseless, but menacing, a winged Pteranodon, twenty-one feet from tip to tip of wing, soared heavily above him. A pigmy in a world of giant monsters, the boy raced on, speeding from—he knew not what, to—he knew not whither.

The sense of terror from the monstrous brood became more keen as a closer peril grew. His knees ached almost beyond endurance from the strain of trying to keep his seat, for no horsemanship could avail upon such a steed as that which he was riding. The long jerking leaps, though they covered ground amazingly, seemed to drag him inside out at every stride. The red-brown neck stretched far ahead, and gleaming in the dull-red dusk jutted the single horn, spirally twisted like a kudu's and lengthening even as he looked at it.

Suddenly, without an instant's warning, the beast threw back his head. The gleaming horn jerked to within a few inches of the boy. The lad paled.

" Next time—" he said.

What could he do next time?

Without pausing, the Thing sped on, racing like the wind over a mountainless world, so that Perry did not dare throw himself off its back. Lower sank the sun, till only one-half of its orb was seen, its beams lying level over the plain that saw never a hill over its thousand miles of length. Worst of all, instead of the kinship between steed and rider that gives strength in the most desperate pursuit, he felt the malevolence of the evil thing he bestrode, and tried to brace his nerve against an attack from his sole means of escape from this browsing ground of swollen reptiles.

He had not long to wait. In mid-leap, the creature checked its speed, plunging stiff-legged, at the same time tossed back its now long and twisted horn to pierce him to the vitals. Tense for the spring, Perry thrust himself upwards from the knees, the sudden stoppage throwing him over the creature's head. Well he knew that if he fell on the ground sharp hoof and sharper horn would pin him to the earth. He grabbed the horn as it slid under him, and clung to it like death.

In fury, the unicorn tossed him as a terrier does a rat. The boy felt his hold weakening, but he clung desperately. Sight and hearing failed him, yet he clutched blindly, till with a wrench the strained finger-clasp gave way and he found himself flying through the air. Fortune favored him. He landed on his feet, and though he staggered, he did not actually fall. The second's recovery sufficed to clear his wits, and he dodged as the vicious creature lunged. Before him loomed the vast bulk of a Brontosaurus and behind this he ran, trusting for safety to the small brain and sluggish movements of the giant.

The ruse almost landed him into the jaws of the nose-horned lizard, the carnivorous Ceratosaurus, twenty feet in height, and he doubled back, actually under its fore-limbs, as its large head and formidable flesh-tearing teeth threatened the unicorn, which reared and refused the combat.

The moment's respite as the monsters faced each other, gave Perry a chance to breathe.

"Where now?" he gasped, glancing round wildly for some place to hide.

But, in that flat expanse, with the araucarias and tree-ferns only a green blur in the distance, there was no cover. The unicorn saw him and charged again. Some strange instinct told him what to do. Again doubling around the huge dinosaur, the boy cast himself despairingly on the back of a creature browsing a few feet away.

"Up!" he yelled.

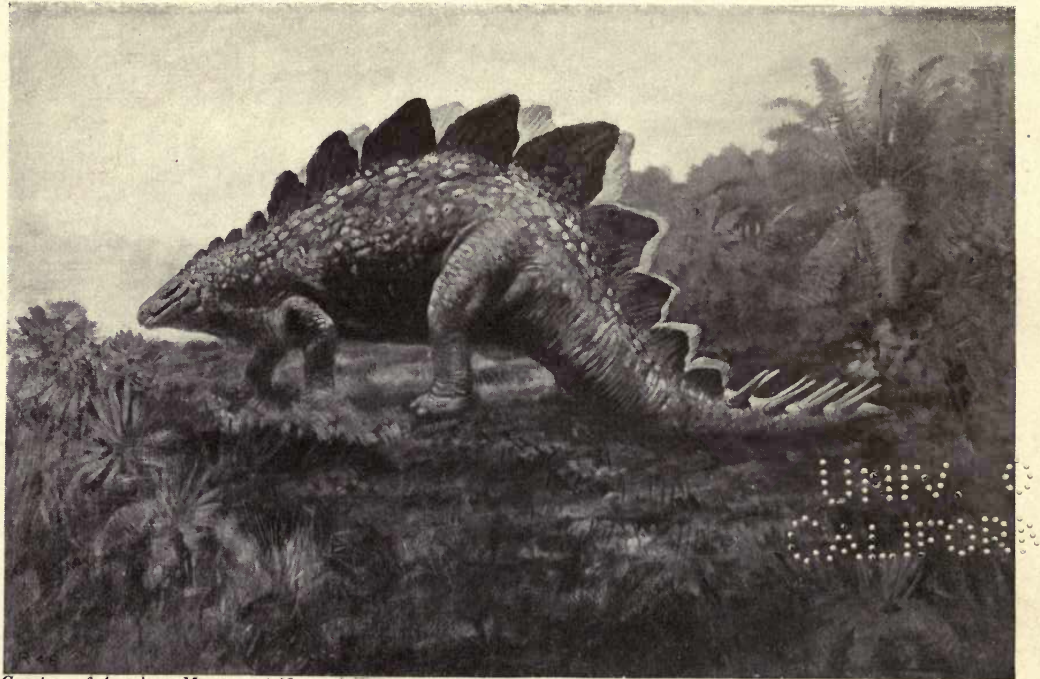
As though impelled by the terror in the boy's voice, or by the still greater terror of sound in that silent world, the light-limbed Anchisaurus rose to its kangaroo-like attitude and began clumsily to run. Some twenty feet of start was gained before the unicorn caught sight of him and then the chase began. The Anchisaurus, more terrified even than the boy by this strange creature clinging to its neck, and driven on by the gleaming horn behind, leaped into full stride, covering ten feet at every step. If the gallop of the unicorn had been hard to bear, this swaying run was worse, for, as the Anchisaurus swung first one foot then the other, the neck and tail rolled to the opposite side to maintain the creature's balance. No cockle shell on a stormy sea ever tossed as did Perry on the Anchisaurus' neck. But it was his only chance of safety from that gleaming horn behind, and tightly with arms and legs he gripped the creature's neck above the shoulder.

The sun was nearly down, but a slight, a very slight rise in the ground gave firmer footing, both to unicorn and Anchisaurus, so the speed of both increased. Little by little the lumbering saurians began to grow fewer and at last were seen no more. In their place came spiny lizards, at first few in number, then more and more, huge and monstrous, until in the dim twilight and the silver glow of the rising moon, their threatening shapes seemed like a world of jagged rocks heaving as the billows of a tempest-whipped lake.

Then, as though determined to give battle to its strange pursuer, the Anchisaurus stopped, and Perry, fearing that his strange mount would find some swift accounting for his temerity, slipped off, again to face the unicorn.

There was no need.

Between him and the savage beast that had chased him for miles over the swamp stood an old battle-scarred Stegosaurus, fully twenty feet in



UNIV. OF CALIFORNIA

Courtesy of American Museum of Natural History.

STEGOSAURUS, THE SUPER-DREADNOUGHT OF OLD.

Huge armored monster of the reptile world, thirty-five feet long, as tall as a modern elephant to the top of the spines, protected by sharp horny plates against the attacks of flesh-eating giants.

length, its spines jutting into the air far above the boy's head. As he looked, the armored tail, with its jagged, horny plates, lashed out at the unicorn and felled it to the ground. The beast half tried to rise and lunged its horn, white in the moonlight, at the throat of its terrible foe. But no weapon could pierce that living fortress of defense and the horn slipped uselessly over the scales.

The head of the Stegosaurus—so tiny for so great a bulk of body—bent as though to smell the wounded creature that the blow of his tail had crushed, but, not being an eater of flesh, the huge living fortress turned scornfully away.

Injured, but not mortally, the unicorn half rose, when Perry, seizing his chance, drew from his belt his hunting-knife and slit the creature's throat.

Then, placing one foot on the body of the animal, he cried aloud—the faded green book fluttering from his lap as he sprang up—

"I've caught a unicorn!"

CHAPTER III

PIRATES OF THE AIR

PERRY'S father, whose entrance had awakened the boy, looked quizzically at the lad as he stood rubbing the sleep out of his eyes.

"I don't know about catching a unicorn," the old merchant said, with more than a trace of amused understanding in his tone, "but there's a big chance that you've caught a cold! You'd better get to bed, son, just about as quickly as you know how. Then you can go ahead and catch all the unicorns you want."

The boy looked a little shame-faced at having disclosed the fact that he had fallen asleep and had dreamed of the monsters on which his mind had been set, but his father put his hand on the lad's shoulder, and said kindly:

"We'll talk about this again some other time, Perry, and if you really feel that you want to take up a fossil-hunter's life, I'll not put anything in your way. I had hoped—" he added regretfully, " that you would come right into my business, but after all, every tub must stand on its own bottom. If you do go into the scientific work, I'll at least have the satisfaction of seeing some of my own old dreams coming true, even though at second-hand. Slip along to bed, now, lad."

Still only half-awake, Perry made some indistinct reply, undressed and in a few minutes was fast asleep, this time too soundly even to dream of monsters, until the light of a morning that had forgotten those ancient times, woke him to the interests of a new day. It did occur to him, though, as he was dressing, that the sun as it rose that morning had risen just the same, thousands of years ago, and would rise the same way hundreds of thousands of years hence, and he wondered what kind of creatures would be living on the earth then.

By tacit consent, nothing was said at the breakfast table concerning the subject that had been discussed the night before, for Perry's mother was inclined to jump to conclusions and it was an understood thing in the household that the best time to inform her about anything that was new was after it had been decided and settled. So

Perry started off for school, just as usual, and for over a week he kept his ambitions to himself.

One Saturday morning, however, at breakfast-time, his father said to him:

"Perry, if you've nothing better to do, you might walk down with me to the office this morning."

"Sure!" the lad replied gladly, for these Saturday morning walks were a great pleasure to him. The old financier always had his car come round to the door sharp at 8:30 in the morning, but if the day were fine, it was his custom to dismiss the chauffeur and to take the three miles to his office at a brisk walk. He was a good walker and had trained Perry to keep up a lively pace. This morning, as soon as they had struck their gait, the merchant said to his son:

"I had a letter from your Uncle George last night."

"Uncle George?" repeated the boy, questioningly.

"Yes."

"Was it—" Perry hesitated.

"About you?" interpolated his father. "Yes, it was."

"Oh, Father, what did he say?"

"I had asked him about his proposed expedition to Egypt, and especially I wanted to find out when he planned to start."

"And he's going soon?"

"Two weeks from Monday."

The boy was aching to hurl a series of questions at his father, to bombard him with them, but experience had taught him not to show impatience. Trying to hold himself in check, therefore, he said, only:

"Is he going for the Museum?"

"Yes. He wrote me that he is anxious to trace the ancestry of the elephants. It appears that we don't yet know where the elephants came from, and we don't know exactly from what kind of a beast the elephant developed. The British have done a little work along that line in lower Egypt, but for the time being, they have given up excavating and the Museum has secured permission from the British Government to explore the Fayum."

"Uncle George will find whatever there is to find," Perry asserted confidently.

"Perhaps," his father rejoined, smiling, "you may be the one to do the finding."

"Me?"

"Why not?"

" Oh, Father, then I'm really going? "

" Do you want to go so much? "

For an instant the boy was tongue-tied, for it came over him with a rush that all his boyhood dreams were about to be realized. Then he burst out with:

" Want to go, Father? I'm wild to go! "

" Well, then," the other answered with mock resignation, " I suppose we'll have to arrange it. It's true, son, that your uncle seems to think the idea of your joining the expedition is a bit foolish. He says you're too young to know what you're about and not strong enough to be of any use to the expedition."

" But—" began Perry, interrupting.

" On the other hand," continued his father, not heeding the interruption, " he says he'll give you every chance to learn, though he appears to discount nearly everything I said about your knowledge of fossils and of paleontology in general. I don't know, but perhaps I did lay it on a bit thick. So it'll be up to you, son, to make good my words."

" You bet I'll do everything I can," declared the lad excitedly. " Have I got a regular appointment, Father? "

"You have not," was the emphatic reply. "Museum authorities don't appoint boys to official positions on a scientific expedition, even when they're as lanky and overgrown as you. A man has got to be a simon-pure expert before he can get a Museum appointment, and even then, he's got to work up through an assistantship. No, my boy, you're just accompanying your uncle and I'm footing the bill.

"I've always been willing to hand out cash freely for the scientific work of the Museum and I had sent a cheque for five thousand to the fund for this very expedition, before you had said anything to me about your Patagonia idea. That subscription helped, to a certain extent, but even so I don't believe I could have persuaded the Director to let you go along unless he was convinced that you were a promising young paleontologist. You know I was away last week?"

"Yes."

"I went to New York to see the Director of the American Museum about you. One of your friends—an assistant curator, who knows our Director down here—spoke up in your favor."

"I can guess who that was!"

"Maybe, but you won't find out from me."

The financier laughed. " The American Museum director had to have his little joke, of course," he continued. " Do you know what he told me—

" ' Mr. Hunt,' he said, and his eye had a twinkle I've seen there several times, ' a precocity in paleontology is a species new to me.'

" Of course, Perry, I had to back water a bit."

" You needn't have, Father," protested Perry. " I don't want to brag, but I'll just show him! "

" That's the right spirit, my son," replied the other, " but you've a long road to travel. I went just far enough along that road myself to see what a long journey it is." For a moment the counting-room and the figures and the complexities of modern business life faded away from the old financier's mind and he looked forward unseeingly and reminiscently. " I'd have liked to have gone on with it," he added, " but other things came between."

Perry kept silent a minute or two, then said, with boyish gentleness:

" We'll be in on it together, Father, anyway. And I feel great about it, really."

" Of course we'll be in on it together, as you put it," the other said, shaking himself free of memories, " and you'll have to make a record for yourself out there. It's a good thing for you that you're so far ahead in your school work."

Perry looked up surprisedly.

"How's that?" he asked.

His father smiled quietly.

"I saw your headmaster the other day," he answered. "You don't suppose you'd have had any chance to go if I found that you had been neglecting your school work during the winter, do you?"

"But the exams?"

"Are all arranged. The headmaster said your term marks were high enough to let an average examination pass you easily. The questions are to be given me in a sealed envelope, I shall hand them to your uncle, and at some convenient time, probably on board ship, you're to do the exams and your uncle will forward them to the school with a letter saying that they were done in his presence and without any assistance from him. A certain percentage is to be taken off for irregularity, but unless you fall down hopelessly on the papers, I feel sure that you will pass for the year."

"You've thought of everything, Father," rejoined the boy, gratefully.

"Well, son," was the response, "it's up to you to make the most of it. The arrangements are a little sudden, but you can be ready in a couple of weeks, can't you?"

"I could be ready in half an hour," Perry exclaimed enthusiastically.

"That's rather precipitate," his father commented, as they turned into the street leading to the office, near the corner where the two generally parted, "we won't ask anything as rapid as that. But two weeks from to-day, you're to start for New York, and there you'll board the steamer for the Mediterranean. It's a great chance for you, my boy."

During those two weeks Perry walked on air. He was the envy of all his boy chums and by the time he was ready to start he had been asked for so many fossil remains by his boy friends (who didn't know whether a Mosasaurus was the size of a sparrow or a whale) that he would have had to discover a prehistoric cemetery in order to fulfill all the requests. But the boy had been thoroughly trained not to make promises he could not keep, and thus he saved himself from many an awkward refusal later.

When the fated day came round, when he had seen his pith helmet and other parts of his tropical outfit safely packed, Perry was so excited that he could hardly talk, and his farewells were little more than stammering interjections. His mother was disappointed, for she expected some evidence of emotion, but the old merchant knew boy nature better and was well pleased over the lad's eagerness to be off. Indeed, despite his years, the financier envied his son and would have liked nothing better than to have been able to jump aboard the train with him. But he contented himself with a hearty handshake—quite a grown-up one, purposely—and stepped into his motor-car resignedly, as the departing train rounded a distant curve.

As the through express thundered past station after station, Perry had one swift pang of regret to think of the school commencement and the games he would miss, but when he thought of what was ahead of him, the thrill of doing real things came over him like a tornado and swept aside all thoughts of school. That his learning was not over, but only just beginning, he thoroughly realized, for along this line had been his father's parting words:

"In some fields, son," he had said to Perry, "you can succeed by making a bluff, but in scientific work you've got to know, and to know that you know. Science is real and big, all the way through."

Dr. Hunt met the boy at the New York terminal. Although uncle and nephew knew each other in the vague way that relatives do, neither had ever thought of the other as taking a place in his life, and each anticipated the meeting with great interest.

The professor's first thought was that the boy looked rugged and sturdy, and Perry's first thought was that there was far more of command in his uncle's manner than he remembered. Recalling his father's advice against "bluffing," Perry was careful in his statements as he chatted with his uncle on the way to the steamer and consequently gave a favorable impression.

"Your father tells me you know considerable paleontology," said the leader of the expedition.

"I've always been keen on fossils," the boy replied, "and so I've managed to pick up little bits about it. But of course I haven't really studied; not the way I hope to, some day."

"You know your geological periods, I suppose?"

"Backwards!" replied Perry confidently, for he knew that he really did know them, and his friend in the Museum had taught him to see how important was this groundwork in any fossil studies that he might do. So, when his uncle, in a few sharp questions, put him on the rack, Perry came out of the ordeal well, because he had only claimed to know exactly the things he did know. As a result, he won from the accurate and careful scientist the golden opinion:

"I shouldn't be surprised, lad, if we made a paleontologist out of you, after all."

To an inland boy, such as Perry, every detail of the steamer was of interest. Some of the members of the expedition, who had rather dreaded the idea of a boy as a member of their party, were most cordial to the lad when he showed himself at the same time quiet and eager to learn. To one of the younger men, Antoine Marcq, a Belgian scientist, Perry was especially attracted, and they chummed up right away. Antoine told him that he had a young brother, about Perry's age. The Belgian proved a most delightful companion, full of stories and with a true scientific imagination. Until the steamer drew clear of the harbor and began to meet the bobbles of a choppy sea, he regaled the lad with adventures from ports all over the world, all of which, it seemed from his yarns, he had visited at some time or other. But the afore-mentioned bobbles gave the ship a wriggling motion of which the boy, at first slightly, then seriously, disapproved, and for the next couple of days even Antoine's yarns lost their interest. It was the lad's first sea voyage.

The first morning that he got over his sea-sickness sufficiently to eat a hearty breakfast, which was the third day out, the lad's attention was attracted to a large gull which was swooping in circles about the masthead. He pointed to it.

" What is that, Antoine? " he asked. " A booby? "

For he remembered having read somewhere about a booby having been the name of a sea-bird and the word had stuck in his memory.

" A booby, oh no, oh no," said Antoine, with a doubling of the negative that was a marked characteristic in his speech, " no booby as far north as this! It is one of the sea-gulls, a black-backed gull."

" I thought all birds that flew over the sea were sea-gulls," remarked Perry.

" Not at all, not at all," replied the other. " I show you in a minute." He paused. " See? "

he added, pointing to a bird a little smaller than the gull that had attracted Perry's attention. "That is a cousin of the 'booby.' It is a gannet. If you look, you can see that his neck is longer and that his chest looks different from the black-backed gull. That is because he has a long breastbone and the ribs are set in at a different angle, so, when he plunges into the water with a big splash after a fish, he does not hurt himself when he hits the water. You can dive?"

"Oh, yes," answered Perry, "I'm quite a decent swimmer."

"You know that when you dive, if you hit the water 'smack,' it hurts?"

"You bet it does."

"The gannet drops suddenly, and so the pointed breastbone does for the diving bird what you do when you put your hands in front of you. It divides the water."

"That ought to make them good fish-catchers, I should think."

"The very best, the very best," agreed Antoine. "The gannet is a relative of the cormorant, and you know the Chinese train the cormorants to go and fish for them."

"And bring back the fish?"

" Yes, yes."

" I should think the cormorant would eat the fish himself."

" No, no, he cannot. The Chinese put a ring around the bottom of his neck so that he cannot swallow."

" That's a great scheme," the boy commented. " But why doesn't the cormorant fly away? "

" He is trained. Why doesn't your dog run away? "

" Training, I guess," agreed Perry after a moment's pause. " But a big bird seems different, somehow. How do they train them, Antoine? "

" This way. They take the eggs of the cormorant, and set them to hatch under a hen."

" The ordinary hen—" interrupted the boy.

" Yes, yes, the hen. As soon as the little cormorants are big enough to feed, they take them to a pond where there are a lot of small fish. They tie a string to one leg of the bird. When a cormorant catches a fish, the trainer whistles very loudly and then pulls in the bird by the string. He takes the fish and lets him go again. After a little time, when the bird hears the whistle, he comes back to the boat. It is pleasanter to swim back or to fly back than to be tugged by a string.

"When the bird is big, they take him to the sea and he catches the fish, returning to the boat at the whistle. He cannot swallow the fish because of the ring. At the end of the day the cormorant gets all the fish he has caught that are not good for the market, and he keeps on catching all the day long because he is always hungry."

"Somebody ought to start a Society for the Prevention of Cruelty to Birds," put in Perry with a grin.

"Why? It does not hurt the cormorant. He gets plenty to eat. It is not cruelty to make a bird work, any more than to make a horse work. But if you want to see something in Nature that is like a bully, look there!"

The young scientist pointed over the port quarter of the steamer, where a flock of terns was wheeling and dipping.

"What are those?" the boy queried.

"Terns," the other answered. "Very much like gulls, only that they are slenderer and have forked tails."

"I don't see anything wrong there," continued Perry after he had observed the merry bustle and excitement. "They seem rather jolly little chaps."

The other pointed a long accusing finger a little to the right of the flock.

There, flying as straight as an arrow shot from a bow, with a steady swift flight came a dark and resolute-looking bird. Into that flock of terns he plunged, like a rakish pirate schooner cutting her path amid a fleet of white-sailed pleasure boats.

In the center of the flock of birds he stopped, poised. The whirling of the terns had become more agitated and their hoarse shrieks betrayed their terror. Then, it seemed that the intruder had picked out a victim, for with a sudden swirl he darted at a tern that had wheeled up from the surface of the ocean a minute before. The tern, light and agile, dodged and sped hither and hither, gliding, mounting, doubling, with the dark stranger ever behind him, apparently eager to tear him to pieces. At last, believing that the vengeful creature behind him could not be shaken off, in one last final effort to escape, the tern lightened his flight by disgorging the contents of his gullet.

Instantly, with a movement so quick that Perry was hard set to follow it, the pirate caught in mid-air the fish that the tern had dropped. Pouncing upon it from above, like a falling thunderbolt, his powerful bill seized the fish. A quick upward jerk of the head sent the silver thing gleaming above him, and, as it whirled, he caught it in the proper position for swallowing, head first. Then, gliding back toward the middle of the flock, the frigate-bird poised, ready to pounce upon the meal that the next tern would catch.

"The grafter!" exclaimed Perry, when the whole plan was clear to him. "Why doesn't he catch fish for himself?"

"He cannot, he cannot," Antoine answered. "He is made to live that way. He cannot dive, no, nor can he plunge into the water. Some one else must catch fish for him, or he will die."

"That's the limit!"

Antoine shrugged his shoulders.

"Man is just as bad," he said. "The cow makes milk for the calf, Man takes it; the bee makes honey, Man takes it; what's the difference?"

"I suppose it's so, when you put it that way, we do manage to sneak a lot of stuff that animals have planned for their own little savings. It seems a shame, somehow, and yet it seems right, too."

"It is Nature's law, yes," the young Belgian replied, "always the more powerful creature preys upon the less."

"It's a good thing," said Perry, thoughtfully, "that the frigate-bird isn't any bigger. A five-foot span is big enough, anyway. Suppose he were as big as an albatross, Antoine, why, the terns would never get anything to eat at all."

"If he were as big as an albatross," retorted the other, "the little birds could dodge him."

"Isn't the albatross about the biggest thing that ever flew?" asked the boy.

Antoine made a gesture of negation.

"No, no," he said, "he is the biggest bird, the biggest thing with feathers that has ever been, but the Pteranodon—the Pteranodon was more than half as big again and would look twice as big."

"Pteranodon," said the boy thoughtfully. "Let's see, Antoine, that was some kind of lizard-bird, wasn't it?"

"Not a bird, not a bird," replied the other, "but it was a lizard that flew."

"Didn't it have wings?"

"No, no, it had aëroplanes," was the astonishing answer. "Hold out your hand!"

Wondering what was coming, the boy did so.

" Double your thumb under, put the three fingers close together but not quite touching, and spread the little finger out," ordered his friend.

Perry obeyed.

" Now, imagine you have claws on the three fingers, and make your little finger four feet long. Next picture to yourself a skin like a bat's stretched from the tip of the finger to your feet and you have a Pteranodon."

" Just like a big bat! "

" No, no. The bat has five fingers. The bat's thumb is a claw, and the membrane that makes the wing is like a big web between the long, long fingers. Quite different. Then the bat is a mammal. The Pteranodon, like all the flying lizards, was a reptile. The first bat was not born until thousands of years after the last pterodactyl or flying lizard died. There were lots of different kinds, but all their flying planes, or wings, were stretched from one finger. That's the reason of the name, Perry, ptero—dactyl, wing—finger. Some were smaller than a sparrow, others were big. The Pteranodon was the biggest. Some had teeth, some had beaks like birds. There was the Ramphorhyncus—"

" Oh, I know him," said the boy eagerly, " he had a tremendous long tail with a rudder at the tip."

"Yes, yes," agreed his friend. "And do you know the Dimorphodon Macronyx?"

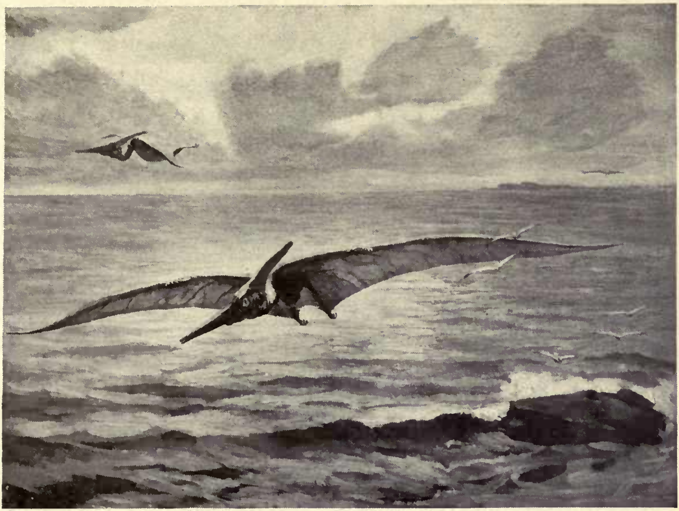
"Big-headed thing, looks like a nightmare, with a rat's tail, teeth sticking up on the outside, and eyes that look as if he'd been in a fight? Is that the one?"

Antoine laughed at the description.

"It is not quite scientific, worded that way," he answered, "but you have the idea. That is 'him,' as you say. None of these really flew. They aëroplaned."

"I don't quite understand," said the boy. "How do you mean they aëroplaned?"

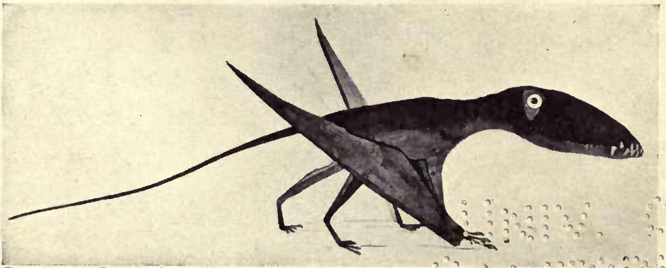
"See," said his friend, "a bird flaps his wings and rises. Some birds can glide for hours and hardly ever flap their wings. But many of the flying lizards could not flap their wings at all. They had to climb up a tree or a cliff with their claws and then throw themselves into space. Then, with the start they thus got, they could swoop and glide and swirl for quite a long time. When the spurt was over, they would have to find some new place up which to climb. Some of them, if they were on a flat plain, would die."



Courtesy of American Museum of Natural History.

THE LARGEST CREATURE THAT EVER FLEW.

Pteranodon, the flying reptile, twenty-one feet from tip to tip of "wings," the last of a giant race, soaring over the Cretaceous ocean.



Courtesy of D. Appleton & Co.

A FLYING NIGHTMARE OF OLDEN TIME.

Dimorphodon Macronyx, size of a small dog, one of the minor terrors of the air, ten million years ago. Restoration from Seeley, in "Dragons of the Air"; pose of restoration questionable, as fore-legs could not be used for walking.

"Even the Pteranodon?"

"No, no," his friend answered. "Pteranodon was so big. From tip to tip of the planes or wings was nearly twenty feet. And his body was very small. Even the bones were tiny. A Pteranodon bone over two feet long and two inches in diameter, was like a piece of heavy cardboard rolled into a tube."

"Hollow?"

"Quite, quite hollow. And he had very little weight to carry. We know he could not have flapped his wings very much."

"How can you find that out?" queried Perry. "No one was there to see him."

"No, no. But it takes muscle strength to flap wings, and it needs a strong breastbone to attach the muscles. The flying lizards did not have this. Then, too, the bones were too thin to flap such big wings. It was nearly all gliding. So you can see why the birds were the winners in the fight."

"I surely do," the boy answered. "But if the bird plan won out, and the pterodactyl didn't, why has the bat plan worked?"

"The bat's wings are four times as strong as the pterodactyl's, because all four fingers are there," was the reply. "Then, too, the bat is a mammal and warm-blooded. Besides which, most bats are small. The big bats fly slowly, flapping their wings like a crow."

"Were there any birds to set up in competition with the flying lizards?" asked the boy.

"Not at first," the other said. "But when the pterodactyl failed, Nature had to start on something else. So she tried birds. Still, the first ones were more than half reptiles. They even had teeth."

"Birds with teeth?"

"Great long teeth," said his friend. "I suppose, Perry, in all the history of fossil discoveries in the rocks, one of the greatest events was the day when the first bird was discovered in a rock in Bavaria which was being quarried for lithograph stone. That rock is made from a fine kind of mud, which was laid down in the Jurassic Period. One of the very first birds in the world had evidently got stuck in that mud, hundreds of thousands of years ago, and although he had struggled to get away, he was stuck fast. He had drowned and died there.

"Then, day by day, week by week, the mud settled around him, until finally it reached his body and his head, and entombed him absolutely. The mud must have been coming down quite fast, for all his body was covered even before the feathers had rotted. For years and years, for centuries and centuries, mud had been deposited on top of him, thousands and tens of thousands of years had put other rock strata above the mud and then, in a later age, there had been a rising of the earth and it was all dry land once more.

" Still more hundreds of thousands of years passed, and then Man came. A workman, digging out stone, saw this dead bird, even the marks of his feathers on the stone. Even then, no one could believe it was really a bird, and the jaw, which was lying a few feet away from the marks of the feathers, was thought to be the jaw of a fish.

" Some day, perhaps, Perry, you may be lucky enough to find one still earlier! Think of a Triassic reptile heralding a bird! That would be a triumph, for there must have been some small leaping dinosaur which gave signs of bird-like development. Just think, Perry, if you should be the one to make the grand discovery! "

" It would be great," cried the boy.

" That's the excitement of paleontology," went on the other, enthusiastically. " You've read of the gold-fever, and how men will spend their lives alone in the mountains, hunting for nuggets. Then, when they find them, the gold is just like all the rest of the gold in the world. But when we find something new, it's something that no human eye has ever seen before, it's the gateway into a new world. Any day, if we were on an expedition among Triassic rocks, we might find the bird that lived before the Archæopteryx and learn for the first time exactly how the birds first came to be."

"There aren't any birds living to-day that are like those old primitive ones, are there, Antoine?"

"Not really alike," the other answered, "because those early birds were still half reptiles. For example, the Archæopteryx had a long tail like a lizard, with a feather on each side of each joint. Then, too, he had claws on the joints of his wings. Now, there is still one bird living that has claws on the end of its wings when young, and climbs around the trees with them before it learns to fly. That's the—"

"Hold on!" cried Perry. "I'll tell you the name. Wait a bit!" He thought hard. "It's the—the—Hoactzin, isn't it?"

"Right, right," said Antoine, "you have read your books well. The first birds were not highly developed, and probably they were not as good flyers as the flying lizards. Most likely they only took short flights. Still, the future was theirs, for they were built upon a better plan."

"Because of the wing-flapping?"

"Yes, for one reason. But the pterodactyls might have developed that. Indeed, some of the little ones may have been able to flap. It was the cold that first gave the birds their real start."

"The Ice Age?"

"Not the one you mean, Perry, but the second Ice Age, at the end of the Age of Chalk. It makes the geological history of the world a great deal easier to remember, if you divide it into the three great Ages of Ice. The first came at the end of the Coal-Forest time or the Carboniferous Period and closed the Empire of Fishes and Amphibians; the Second Age of Ice came at the end of the Age of Chalk, or the Cretaceous Period, and it closed the Empire of Reptiles; the Third Ice Age came at the end of the Pliocene Period and it closed the Empire of the Beasts. As the Ice-sheet of the Glacial Epoch slowly drew back toward the North Pole, Man took his place as the leader of Life."

The boy looked up quickly.

"That's a dandy division, Antoine," he said; "it's heaps easier to remember that way. And you say it was the Second Ice Age that shoved the birds ahead?"

"Yes, yes. During the Age of Chalk, nearly all Europe was under a warm sea. There were millions of little sea-creatures with shells, in those tepid waters. Sea-shells, you know, are made out of the lime that is dissolved in the sea, but after that lime has been made into a sea-shell it does not dissolve. These billions of microscopic shell-fish lived, made their homes and died, so that their shells rained continually through the water to the ocean floor, and, inch by inch, the accumulated shells made deep beds of lime or chalk. Some beds are hundreds of feet thick.

"Slowly, slowly, the bed of the ocean rose, until it came near the surface of the sea. Still it rose, throwing off the water that had covered it. The oceans rushed into a new bed, and Western America, Southern Europe and Southern Asia rose above the water for the last time, much in their present outlines.

"The changes of the earth's crust made numberless volcanoes, especially in those parts of the earth that had just appeared above the surface. In the glare of eruptions that never stopped, amid the thunder of vast explosions, the hissing of great geysers and the unceasing growl of earthquakes, the land grew higher and higher above the sea, and the world grew colder and colder. It was the end of the Empire of Reptiles."

"Ah!" exclaimed Perry, remembering his dream.

"As the world grew colder," Antoine continued, "the soft vegetation died away and harder grasses and trees and shrubs took its place, needing creatures with better teeth to chew the stronger fibers. And still the grip of the cold increased.

"In that time of miserable frigidity, the flying lizards suffered terribly. Their thin wings of membrane had no resistance to the biting blasts that whistled over the ever-rising land. Their cold blood afforded no store of vitality against the frost.

"The birds, their rivals, protected with feathers, with warm blood in their veins, with deep breastbones giving them muscles enabling them to fly long distances, got the pick of the food. One by one the shivering pterodactyls disappeared, and perhaps the great specimen of Pteranodon in our Museum was the very last of the giant flying reptiles.

"We can almost see him, half-starved, half-frozen, gliding over the waters of the sea, his gaunt ungainly frame growing weaker and more feeble as numbness stole over him, only, at last, to fall into the ocean that once flowed over what is now the State of Kansas. And so he died, the great Pteranodon, the last of his kind, and, for size, the crested monarch of all that flew in any age that had been or was to come."

CHAPTER IV

SEEING THE SEA-SERPENT

For the next two days Perry was kept busily at work on his examinations, for, as his father had suggested, it was on ship-board that the boy's uncle felt the time to be most opportune for getting that work done. He was deep in one of his examination papers, when, suddenly, his uncle called to him:

" Here's a sea-serpent, Perry! "

The boy came out of his deck-chair with a jump, tripping over his steamer rug and nearly pitching headlong in his hurry. He scrambled to the rail and followed with his glance his uncle's pointing finger.

There, not more than seventy-five feet from the vessel's side, were the moving and undulating coils of what, at first sight, appeared to be a huge snake. Just for a moment, and then a picture that he had seen flashed back to the boy's remembrance, and he turned to his uncle with a look of reproach.

"Uncle George, that's only a school of porpoises!"

"Fooled you for a minute, didn't they?" queried his leader.

"Yes," the boy admitted, "they certainly did. But only for a minute."

"Supposing you had never heard of porpoises, that you had seen them just once and that on a misty morning, seen them the way you saw them just now, heaving themselves clear out of the water, one after the other in a long wavering line, don't you think you might have reported that you had seen the sea-serpent?"

"Likely enough," the lad agreed. "But about the sea-serpent, Uncle George, I've often wondered. Do you suppose that there was ever any real reason for the yarn?"

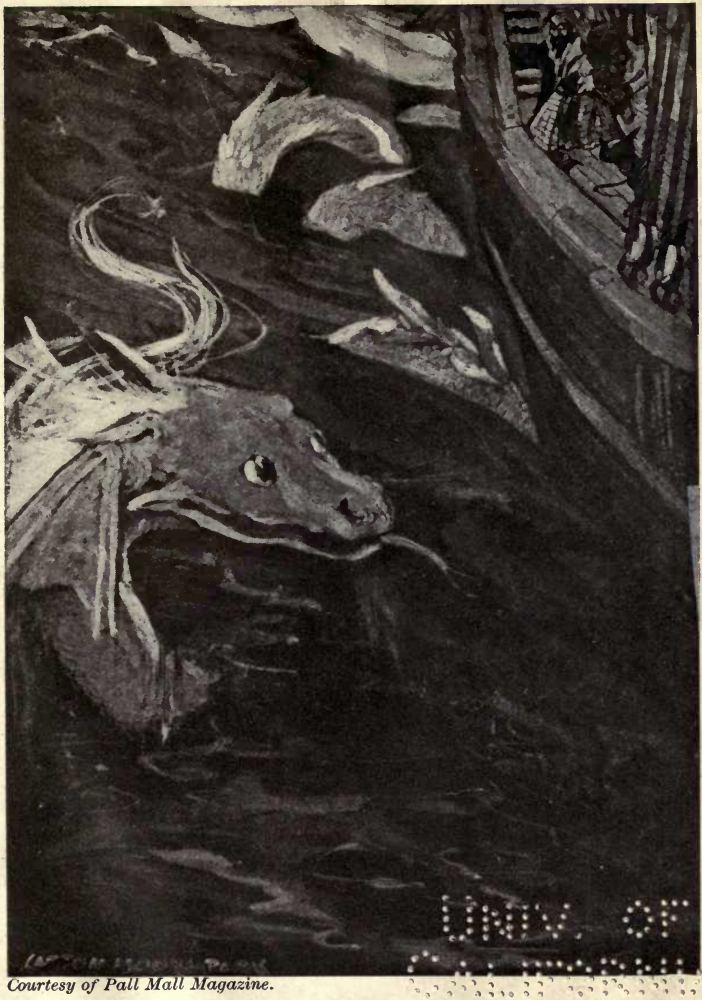
"Why do you call it a yarn?" queried the scientist sharply.

"Why not?" was Perry's astonished answer. "There isn't any sea-serpent, is there?"

"You seem pesky sure about it," his uncle retorted, with a distinct trace of irritation in his manner.

"But I thought every one knew it was a fake!"

"That what was a fake?"



Courtesy of Pall Mall Magazine.

UNIV. OF

SEA-SERPENT ATTACKING A PIRATE SHIP.

Fanciful sketch, but the red flowing mane may have been suggested by an oarfish, of which specimens fifty feet long have been found.

"The sea-serpent yarn."

"You persist in calling it a 'yarn,'" his uncle warned him. "Get out of that habit, Perry, it won't do you any good. It's never safe to say that a certain thing does not exist, until you have absolute proof that it cannot exist. No one would have expected to find birds with teeth or lizards with wings, yet, as you know, there were plenty of these, and we have found many specimens. As for your way of talking about a sea-serpent 'yarn,' don't forget that millions of sea-serpents swam in the oceans of long ago."

"Could there be an Ichthyosaurus still living in the bottom of the sea?" hazarded the boy.

The professor wheeled on him in an instant.

"What was an Ichthyosaurus," he asked sharply, "fish or reptile?"

"Reptile," answered the boy promptly.

"Do true reptiles have gills?"

The question staggered Perry, for he did not know. He thought for a moment, and then remembered that all water-dwelling reptiles came up to the surface to breathe, so he answered:

"I'm not sure, Uncle George, but I don't think any of them have."

"They haven't," was the crisp correction.

" How, then, could any of them be living in the bottom of the sea? "

The scientist snorted impatiently and paced the deck.

" There's a lot of foolish talk," he continued, after a few minutes' pause, " about some race of fossil monsters having continued to the present time, as though, at almost any time, one might happen to come across an Agathosaurus at sea, or a Tyrannosaurus on land. There are, of course, a few survivals, such as the shrimp-like Nebalia, which goes back to the Cambrian Period, to the very beginning of life, but all these survivals are small and inconspicuous. And Agathosaurus of the Cretaceous Period certainly wasn't inconspicuous! "

" Just how big was the Agathosaurus? " queried the boy.

" Big enough to satisfy any sea-serpent-hunter," was the reply. " The Agathosaurus had a neck thirty feet long and a body as large as that of a small elephant, with powerful limbs turned into swimming paddles. This long neck, with its small head and sharp-toothed jaws, must have worked havoc with the fish of the Jurassic seas."

"Weren't there any fish big enough to give him a fight?"

"H'm, hardly," the scientist replied meditatively. "Still, there was the Portheus Molossus, of course."

"The what?" asked the boy. "I haven't ever heard of him."

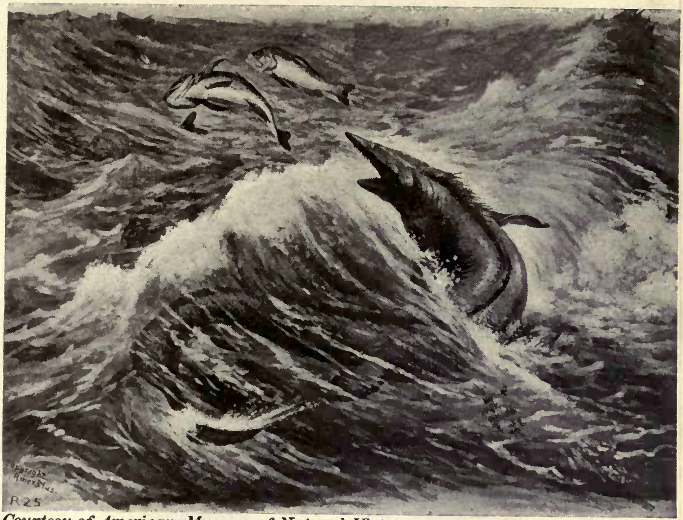
"The bulldog fish," his uncle explained. "Oh, Portheus was able to give a good account of himself. He had a head a little larger than that of a grizzly bear, with jaws even deeper than a bear's in proportion to their length. The teeth stood about three inches above the gums, tiger-like, but, of course, they were fish teeth, much more slender and a great deal sharper. He had two rows of teeth which crossed each other, and even an Agathosaurus would have had trouble shaking off a Portheus if the fish took a fast hold on his snaky neck."

"I wish I could see a scrap like that now," exclaimed Perry regretfully.

"You were born about three million years too late," was the reply, "for it's fully as long ago since the saurians left. They were the strangest army, Perry, that ever trod the earth, some of them monsters of ferocity and terrible to look on, such as the Tyrannosaurus, which, as you can see, means the Tyrant Saurian, but most of them were slow, lumbering, and inoffensive. Of true quickness and agility they had none.

"Over earth and air and sea, they were the masters. In the shallow seas they ruled with an iron hand; they filled great shells like turtles with a bulk vaster than has been seen since; they reared themselves on towering hind limbs like colossal kangaroos, their monstrous tails swinging free behind them; they donned fantastic armor, with spikes and horns, and living saws upon their backs, such as outdid the wildest imaginations of man; they even rose into the air and filled it with the flying dragons, as though to make fairy tales believable.

"From Australia to the Arctic Circle the whole world was in their grip, and one can almost picture two of the great monsters thinking, in their sluggish way, of the impossibility that their mighty lordship should ever come to an end. I say 'almost,' Perry, for you know that these creatures had very little brain. A monster weighing thirty tons, like the Brontosaurus, had only one-quarter as much true brain as an ape of to-day. They could hardly think at all. Yet, in some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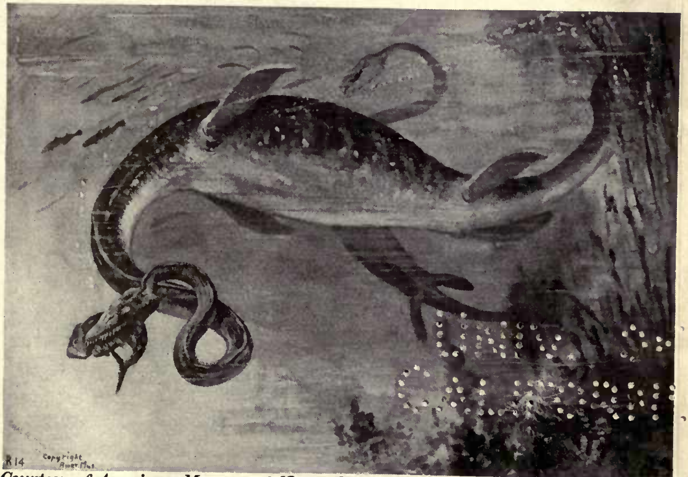
THE SHARP-TOOTHED DEATH.

Thirty-foot Tylosaurus pursuing Portheus, the six-foot bulldog fish, in the Jurassic ocean.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THE JURASSIC SEA-SERPENT.

Elasmosaurus, the scourge of the primitive ocean, seventy feet in length, ravaging the bottom of the shallow sea. Neck less flexible than shown in restoration.

brute way, they knew that they had nothing but each other to be afraid of. The enemy that should conquer them they did not know.

" Then came the cold, the awful cold that drove the Pterodactyls from the earth. The warm seas of the Age of Chalk grew chill, the land rose, the water ran into the deep beds of what is now the Atlantic and Pacific Oceans, the continents as we know them took their shape, the ever-rising earth grew impatient of its slow-brained huge inhabitants, and shook them off. The Tyrannosaurus and all the flesh-eating dinosaurs had found easy prey on the huge vegetarian monsters, but as these decreased they began to prey upon themselves. Their heavy shapes and their slow brains, however, made them unfit for the great battle of life, and quicker and more alert animals took their place.

" When, a hundred thousand years later, the climate relaxed and began to grow warmer again, in the Eocene Epoch, at the beginning of the Tertiary Period, the mighty monsters and the strange dragons were all gone, and a ragged regiment of crocodiles, turtles, and serpents in the tropics, with a swarm of smaller creatures, such as lizards, in the fringes of the warm zone, was all that remained of the world-conquering hosts of the Mesozoic reptiles.

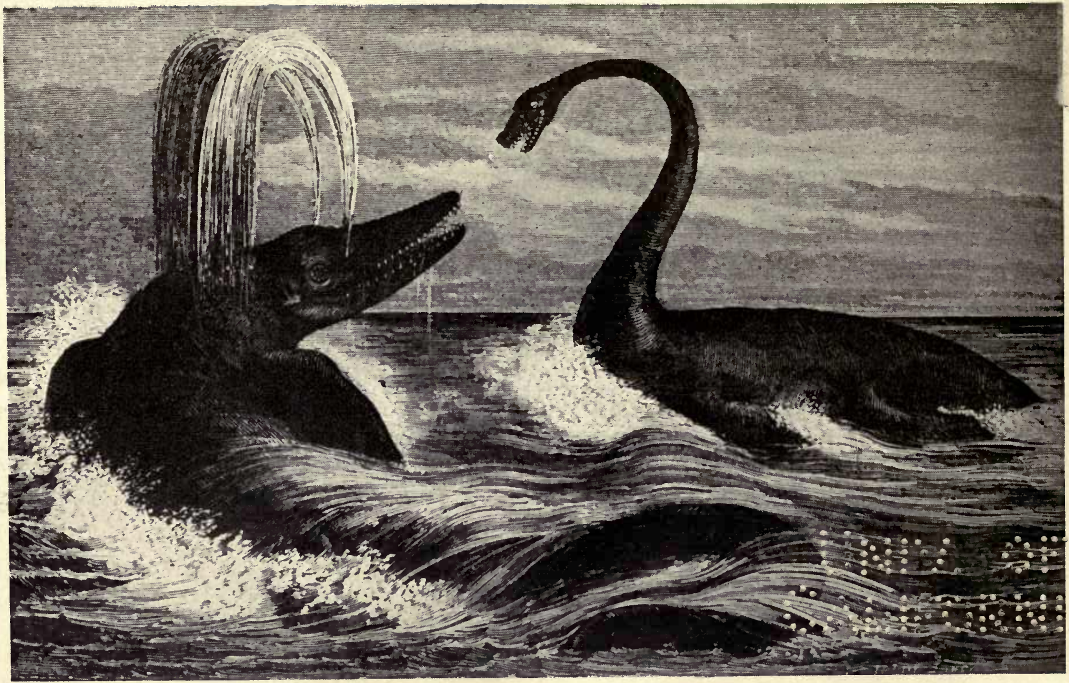
" There are none left now, Perry, and you will wear out your eyes with watching over the sea before ever you will see any of the sea-snake-lizards—the Dolichosaurs and the Mosasaurs, or the fish-lizards—such as the Ichthyosaurs. The Plesiosaurs, too, have gone. Not one of those big sea-reptile forms has sought its prey in the waters of the earth for at least three million years."

" Yet lots of people claim to have seen sea-serpents," protested Perry.

" Plenty of them. But no one has ever made a photograph of one, nor has a single specimen of one ever been put into a Museum," remarked the professor.

" Do you think they were all fake—I mean mistakes?" corrected the boy, hastily.

" Not at all," was the reply. " Some of them were hoaxes, of course. But I'm not the man to believe that other people are lying because I don't happen to agree with them. It's easy to make errors in a subject on which you're not an expert—and few of the people who have claimed to have seen sea-serpents were expert naturalists. Now,



COMBAT BETWEEN ICHTHYOSAURUS AND PLESIOSAURUS.

One of the most famous of the early restorations. Modern discovery has shown that the long neck of the Plesiosaurus was almost stiff, and that the Ichthyosaurus had not a whale-like spout. The latter also bore a triangular shark-like fin on the back.

if a sea-serpent presented himself for examination to a scientific expedition, such as the *Challenger,* or the *Michael Sars,* it would be a different matter. That has never happened.''

'' But you think the people who reported a sea-serpent saw something?''

'' I'm sure of it,'' was the scientist's instant reply. '' The very difference in all the reports shows that.''

'' What do you suppose they saw?''

'' Some of them saw porpoises, without a doubt, like those you saw this morning. But, myself, I believe that most of the stories have started from appearances of the giant squid or calamary. You know, Perry, the squid has been known to reach fifty or sixty feet in length, from the tip of the broad arrow-like tail to the end of the longest tentacle. As squids swim tail first, and as their method of propulsion is by expelling water in little jets from a siphon which is situated near the head, and, moreover, as they often allow the tail (which might look like a head) to project half out of the water, their huge bulk would easily lead an observer to make a false estimate of their size. If you add to this the peculiar bubbling ripple caused by the squid's curious method of swimming, the wake would give the effect of the animal forty or fifty feet longer than its true size. Squids are not at all uncommon, though they seldom stay long at the surface, and their appearances may be the basis of many sea-serpent stories."

"But you do think that all the stories are a bit high, don't you, Uncle George? I mean, you think they're not just right?"

"I may be a little partial to the sea-serpent," the scientist answered with a quizzical smile, "so I should never declare that there may not be some monster of the deep that is occasionally seen."

"But there have been some awfully queer stories," put in Perry, incredulously.

"Yes, there have been," the professor admitted. "The early ones, particularly, seem more or less fabulous. For example, Perry, there was the story of the island found by the old Swedish bishop-explorer, Olaus Magnus. Do you know that one?"

"You bet I do," said the boy emphatically. "Father's got a picture of it in an old sketch-book of his at home. Wasn't that the one in which the old explorer said he landed on an island, took possession of it in the name of the King of Sweden, had a church service there, and then decided to wind up with a feast? After a bit, when the fire really got hot, they smelt a smell of burning skin, the 'island' began to move, and the bishop and the sailors hardly had time to scramble back aboard the ship and cut the rope fastened to the grappling anchor they had cast 'ashore,' when the huge beast plunged down to the bottom of the sea. I know you think a good deal of sea-serpent stories, Uncle George, but I'm leery about that one."

"I'll confess," the professor answered, laughing, "that even the fact that the explorer was a bishop doesn't quite convince me. Yet Svere, King of Norway, claimed to have seen a similar creature, just as large, which he called a 'husguife.' If you don't believe a bishop, how about a king?"

"I think he fibbed, too," was the boy's ready answer.

The professor's eyes twinkled.

"If you do sometime become a paleontologist, my boy," he said, "you'll have to learn to comment on other people's reports in language that is—well, we'll call it a little more scientific. It is safer, as well as more courteous."

"But they were fibs," insisted the lad, with all the uncompromising attitude of boyhood. "How would you put that 'scientifically,' Uncle George?"

"They were—inaccuracies of description consequent upon insufficient opportunity for the development of correct observational methods," was the reply. "That's saying the same thing in another way, Perry."

The lad laughed.

"Tell me some more of the 'inaccuracies,' Uncle," he said.

"Most of them were Norse," the professor continued. "Just in the same way that all English-speaking people believed in the dragon, and all the Greeks believed in nymphs and fauns, and all the Irish believed in fairies, so the Norse world pinned its faith to the Kraken, or the Warrum or Sea-Worm of Iceland."

"I don't remember the Kraken," put in the boy. "Just what was that supposed to be?"

"It was described as being a creature of the deepest parts of the sea. It was supposed to be a mile and a half in circumference, and its horns were as high and as large as the masts of small vessels."

"Did any one ever claim to have seen such a beast?"

"Several people," the scientist replied. "In 1680, a Lutheran minister, the Rev. Anson Friis, reported the discovery of a small Kraken, stranded in a fjord near Alstahoug. He described the creature as almost round, with a head something like that of a parrot and a long tail divided into four round swimming paddles. He went on to say that it took him nine minutes of sharp walking to walk round the carcass. Baron Grippenhjelme, the local magnate, was more moderate in his estimate, but even he declared it to be sixty fathoms (300 feet) across. With a better perception than the minister who had first discovered the carcass, he hazarded the guess that the strange creature was a polyp."

"What do you suppose it really was?" queried the boy.

"That's a little difficult to say," was the guarded reply. "There's not much evidence to go on. There seems no doubt that Friis and Grippenhjelme found something. The remarks about a parrot's beak by one, and the other's reference to a polyp suggest that perhaps a giant squid and an octopus were washed ashore together, and if, as probable, their flesh already was decaying, examination would be apt to be very brief. Don't forget, Perry, that the size was only an estimate. Even the most conservative guesses shrink under the application of a two-foot rule."

"Yet you seem to think, Uncle George, that some of the sea-serpent reports might have something in them?"

"All of them are based on something," was the reply, "and there are a few that one hesitates to deny. It would almost seem certain that there are some large creatures in the sea, in addition to the whales, though probably nothing as large as a full-sized sulphur-bottom whale. It is equally certain that, whatever these creatures may be, they are not serpents, though they may possess snake-like features. One has to be careful about denials," he went on, taking a battered old notebook out of his pocket, and turning over the leaves, "because some reports are quite circumstantial. The most famous of them was the report once made by the captain and officers of a British man-o'-war, the frigate *Dædalus,* in 1848. I thought I had that note in here. Yes, here it is.

"Listen to this, Perry," he went on, "and perhaps your disbelief will have a jolt:

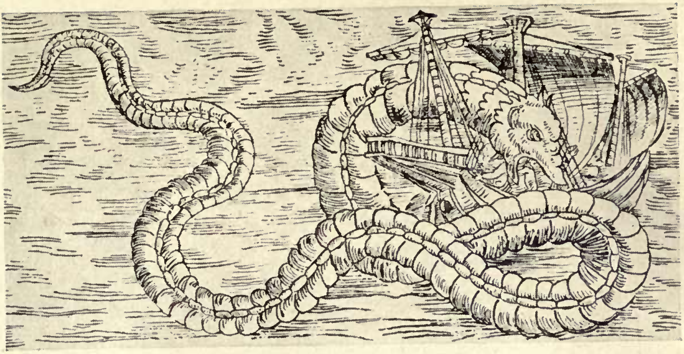
"'I have the honor,'" he read, "'to acquaint you for the information of my Lord Commissioners of the Admiralty, that at 5 o'clock P. M. on the 6th of August last, in latitude 24° 44′ S. and longitude 9° 22′ E. (1,000 miles west of the coast of South Africa) with the weather dark and cloudy, wind fresh from the NW, with a long ocean swell from the SW, the ship on the port tack heading NE by N, something very unusual was seen by Mr. Sartoris, midshipman, rapidly approaching the ship from before the beam. The circumstance was immediately reported by him to the officer of the watch, Lieutenant Edgar Drummond, with whom and Mr. Wm. Barrett, the master, I was at the time walking the quarter-deck.

"'On our attention being called to the object, it was discovered to be an enormous serpent, with head and neck kept about four feet constantly above the surface of the sea, and, as nearly as we could approximate, by comparing it with the length of what our main-topsail yard would show in the water, there was, at the very least, 60 feet of the animal, *à fleur d'eau* (flush with the surface of the water), no portion of which was, to our perception, used in propelling it through the water either by vertical or horizontal undulation. It passed rapidly, but so close under our lee quarter, that had it been a man of my acquaintance, I should easily have recognized his features with the naked eye, and it did not, either in approaching the ship or after it had passed our wake, deviate in the slightest degree from its course to the SW, which it held on at the pace of from 12 to 15 miles per hour, apparently on some determined purpose.

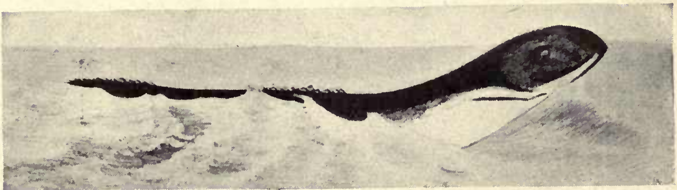
" 'The diameter of the serpent was about 15 or 16 inches behind the head, which was, without any doubt, that of a snake, and it was never, during the twenty minutes that it remained in sight of our glasses, once below the surface of the water; its color a dark brown, with yellowish-white about the throat.

" 'It had no fins, but something more like the mane of a horse, or rather, a bunch of seaweed, washing about its back. It was seen by the quartermaster, the boatswain's mate and the man at the wheel, in addition to myself and officers above mentioned.

" 'I am having a drawing of the serpent made from a sketch taken immediately after it was seen, which I hope to have ready for transmission to



SEA-SERPENT SWALLOWING SAILORS.
From the records of the Swedish bishop-explorer, Olaus Magnus.



Courtesy of Illustrated London News.

THE MOST AUTHENTIC SEA-SERPENT.
This drawing was made on the British man-o'-war *Daedalus*, and the captain and officers, men of high naval rank and standing, signed an official statement that the creature closely resembled this drawing, made at the time. The monster was observed for more than twenty minutes and came close to the vessel. Science has never been able to explain this sea-serpent, and it is still one of the mysteries of the ocean.

my Lords Commissioners of the Admiralty by to-morrow's post.'

"'PETER M'QUHAE, Capt.'"

"What on earth can that have been?" queried Perry, in surprise. "It sounds almost real, somehow!"

"It was real enough," was the reply. "There's no doubt of that. The only question is: What was it that they saw? The sketch—I copied it in my book, here it is—shows that it wasn't a serpent. The captain thought it was a serpent, because it was long and thin. A worm is long and thin, but it isn't a serpent; an eel is long and thin, but it isn't a serpent; and a ribbon-fish may be fifty or sixty feet long, but it's not in the least like a snake. Look at the head in the sketch, Perry, and you'll see that it isn't like a snake's head, at all."

Perry took the note-book and looked at the drawing with the intensest interest.

"It doesn't look like anything in particular," he said, "it's more like a cross between a seal and a whale."

The scientist nodded approvingly.

"Once in a while, Perry," he said, "you show a whole lot of good sense. Professor Owen, the great naturalist, when the *Dædalus* sketch was shown him, wrote a long article suggesting that what Captain M'Quhae had seen was a sea-elephant, of which specimens have been found nearly thirty feet in length. And a sea-elephant is of the family of the seals.

" Personally, I rather question whether Professor Owen was right, because so conspicuous a thing as the trunk-like prolongation of the nose, at least a foot long, would not have escaped the attention of sailors. Seamen's eyes are keen for objects in the water. Some of the supposed sea-serpents probably have been squids, some have been schools of porpoises, some have been ribbon-fish, but I think the monster seen from the quarter-deck of the *Dædalus* was probably some aged and patriarchal creature of the seal variety, a mammal and not a reptile, a creature of this age, not of an age of two million years ago."

The porpoises had passed far out of sight long before this conversation was ended, but his uncle's belief that there was some huge creature still swimming in the seas quickened the lad's interest, and he scanned the waters with the professor's field-glass eagerly and often. He thought of the phrase "beginner's luck" and his hopes continued unabated.

Two days later land was sighted, and the steamer came to the great gateway of that sea which has formed the basin of civilization, that great Mediterranean Sea on which Venice, Rome, Greece, Egypt, and Phœnicia have played their part. To the right, lay mysterious Africa; to the left, frowning and sheer, rose the great rock of embattled Gibraltar, Great Britain's guardian of the straits. The boy was enjoying the sight of land and picturing to himself the scene if the dogs of war were loosed and that front of rock should suddenly belch forth a flame curtain of fire and death before which no vessel could live for a moment.

"No signs of Scylla and Charybdis," said a voice behind him.

"That's so, Uncle George," the boy said, turning, "this is where the old Greeks believed Scylla to be, isn't it? But I'd rather tackle that six-headed monster, in spite of all her appetite, even though each head took a man from the crew, as it did from Ulysses' ship, than I would run the gauntlet of the guns of Gibraltar let loose on us. Still, even Scylla might be uncomfortable. What do you suppose was the basis of that old story, Uncle George!"

"Personification of the peril of adventure," was the reply. "That is why Scylla and Charybdis were first said to hold guard over the Straits of Messina, between Sicily and Italy, while afterwards the twin terrors of the ravening whirlpool and the six-headed man-eating woman monster were located at Gibraltar. As the Straits of Messina became more familiar, the terror had to be put farther away, where only the most daring would venture.

"Remember, Perry, that the Greeks believed they saw a god or a goddess or a demon in all the forces of Nature. The sea was under the rule of Poseidon, or Neptune, as the Romans called him; the dawn goddess Eos, or Aurora, was the mother of the Winds, such as Boreas, the North Wind and Zephyr, the West Wind. So, you see, the Greeks felt sure that every point of danger must be guarded by some kind of demon or monstrous form, while beautiful places were inhabited by fair maidens. After all, Perry, it's not so very long ago since people believed in mermaids. So far as that goes, some people believe in them still."

"Uncle George," exclaimed the boy in surprise, "surely they don't!"

"Oh, yes, they do," the professor replied. "In the year 1903—that's not so long ago—two girls who lived on the Island of Sark, one of the Channel Islands, off the north coast of France, came hurrying to the house of the village clergyman, telling him that they had found a baby with a fish's tail on a beach, and that it was swimming in a pool of water. They were going to pick it up, they said, but when one of the girls put her hand down toward it, the supposed baby opened its mouth and showed a row of sharp teeth like a fish."

"But they couldn't have seen any such thing!" declared the boy. "I know enough for that."

"Wait a bit," came the warning answer; "you haven't heard all the story yet. The minister or abbé, who seems to have been an inquisitive fellow, hurried to the place with the two girls. There, in a rock pool, as he described it in a communication to some local scientific society, he found a mermaid, a little creature not quite three feet long, but looking more like an old woman than a baby, as the girls had described it. He remarks, in his letter, in a certain naïve way, that the mermaid did not seem to understand either English or French. Thinking that she might be bewitched, he baptized her, then and there."

"Baptized her!" said Perry, in surprise. "What for? Did he think she could go to church on a tail?"

"Perhaps he thought it best to be on the safe side," was the reply. "Now here is a point that gives a curious twist of apparent truth to the story. The abbé added that the christening did not seem to make any difference. If he really wanted to color the tale, there was his chance to make a miracle out of it.

"In his half-scientific account of the occurrence, the abbé stated that the mermaid breathed like a woman, not a fish. Although warned by the girls, he tried to pick up the strange creature, but she fastened her teeth savagely in his arm, and when he tried to shake her off, she hung on, letting go her hold suddenly when free from the rock-bound pool in which she had been a prisoner. Falling on the flat ledges of the rocks, she shuffled rapidly to the sea, plunged in and was gone. The doctor who cauterized the abbé's arm added a statement concerning the unusual character of the bite."

"That's a fishy tale!" exclaimed the boy derisively.

"It does sound a bit queer," the professor admitted, "and yet, it's not so long ago since Harvard University had in its museum a 'specimen' of a mermaid."

"What was it?"

"It was a mummied young monkey down to the waist sewed on to the tail of a fish, the monkey's body being all covered with fish scales. It was a marvelous piece of Japanese workmanship, and the naturalists accepted it as truth."

"What a fake!" exclaimed the boy. "I wonder if there's anything like that in our Museum at home."

"Probably not. I doubt if a hoax like that could be worked nowadays," the professor responded, rising from his deck-chair as the bugler blew the call to dinner.

All through their trip along the Mediterranean, Perry became a howitzer of questions and kept Antoine and his uncle busy every moment that they were on deck. One of the things which especially caught the lad's imagination was his friend Antoine's picture of the constant risings and fallings of the great sea on which they were traveling, so that Perry began to think of the Mediterranean as a huge pond which came and went with changes in geology, being sometimes like a puddle in the roadside on a showery day, and sometimes a vast ocean which linked together the waters of the world. Antoine had whiled away many hours of the trip modeling in clay, while the boy watched his skillful fingers—the Belgian was an excellent sculptor—and so, when one day, he undertook to explain to Perry the geological changes in the Mediterranean, he brought up one of his modeling boards. Spreading on it a lump of clay, he smoothed it out and began the story of the formation and changes of the great inland sea.

" At first the world was all fire, all fire," he said, spreading his hands above the board, " thick hot mists, so dense that the sun could not shine through, so hot that the rain could not fall as water, but was turned to steam as it came near the white-hot earth. There was no land, and no sea, then. The earth was without form, and void. So hundreds of millions of years went by.

" After a long time, so long a time that we cannot even guess how long, the earth began to get a little cooler, and a crust was formed. This was the beginning of land. As yet it was only a shell that vibrated like a boiler-skin, a land bordered on every side by oceans that hissed and steamed."

Antoine swept his hand across the clay, until only the thinnest layer lay on the surface of the board.

"So land began," he repeated. "But the crust was very thin. Even the attraction of the moon, which causes the tides, would rip the crust across, the molten rock would well up through the fissures, and the whole world was aglare with fire shining red and reflected on the low-hung clouds of swirling steam. Every century the skin of land grew slightly thicker, though wrinkled and crumpled by the constant wrench and cleavage, first by the daily tides, then by the spring tides, and at last it remained steadfast, save when the frequent volcanic eruptions and earthquakes cracked the crust across."

"It must have been awfully thin!" exclaimed the listener.

"Compared with the size of the earth, that first crust was thinner than a tissue made of spiders' webs around a baseball," was Antoine's reply. "Little by little it grew thicker, however, until parts of it were strong enough to resist the tides. Over these stretches of land, which were the first continents, the radiation of heat grew less, and when the mist from the upper air condensed into rain, it was allowed to fall, instead of being turned into steam, and reached the earth at last, to lie there a bubbling and seething body of water, almost boiling hot. These were the first river and lake systems of the world. All, of course, have gone; the world has been made over, many, many times."

"There was no life then, I suppose?" hazarded the boy.

"Not at first, no, no. But, even to-day, tiny one-celled plants have been found living in hot springs (170°) that are not far from boiling point, and it must have been at some early time in that ocean, as it grew cooler, that life began."

"And whereabouts was that first continent?"

"No one knows, no one," was the answer. "The largest outcrop of the oldest or Archæan rocks is in Canada, where the great Laurentian Range tells the story of the fire-made earth in its granite and gneiss deposits. All that had been deposited upon those rocks has been washed away and the old formation is laid bare. Then, as the land and seas cooled further, the hot steaming mists condensed the water that for so many millions of years had hung in clouds of vapor over the earth and torrential rains began to fall. Thus the huge shallow oceans spread over the globe, leaving very little land. This was the Cambrian Period, the oldest of the six divisions of the Paleozoic Era. You know what 'paleozoic' means, Perry?"

"Sure," answered the boy, "the oldest life."

"Right, right. Now, in the Cambrian Period, all the present Mediterranean was upheaved, part of an early continent that included all of Africa, Eastern Europe and Asia. Western Europe was a shallow sea. In the next Period, the Ordovician, there was a further change and leveling. The Atlantic reached as far as what is now Italy, while Greece and Asia Minor were its coast lands. Siberia was sea, then, Perry, and the Indian Ocean was land."

The lad passed his hand in a puzzled way across his forehead.

"It's hard enough to remember geography now," he said, "but it would be fierce if a chap had to know all that ancient stuff as well!"

Antoine laughed and swept his hand again across the clay.

"You wouldn't have to learn much geography around this part of the world during the next stage, the Silurian Period," he said, " because it was all sea. But," and his fingers modeled a plateau, " at the end of the Silurian Period the land rose again, and when all these changes were complete, two things had happened. Fish had evolved in the sea, and plants had appeared on the land.

" Then," he continued, " came the Devonian Period, when the Old Red Sandstone was laid down under the sea. Curiously enough, Perry, except for a small range of hills in Scotland and for parts of Norway, the only high land in Europe was the part that is now the bed of the Mediterranean Sea, the very land over which we are at present sailing," and he pointed over the vessel's side.

" All through the Devonian Period and the next, that of the Coal Forests or the Carboniferous, the sea ate steadily into the land, the big Mediterranean island was cut in two, and nearly all the world became a dull, hot, dank marsh, with mosses a hundred feet high and huge horse-tails five feet in circumference. There were no seasons then, summer and winter were the same. There was no movement except the sluggish crawling of a giant salamander or the flight of a large primitive insect. Not a spot of color existed, not the song of a single bird. The Carboniferous Period ended with the whole of Europe one sinister and gloomy marsh, the giant vegetation of which became the coal we use to-day."

"Is that why we sometimes find things that look like fern-leaves in coal?" queried Perry.

"Yes, yes, they are fern leaves, for in the Coal Forests were many kinds of primitive ferns.

"Then came the Permian revolution," and Antoine's nimble fingers began to put the clay in great masses on his board. "Real mountain ranges began. The swamps awoke from the dark sleep of the Coal-Forest time and reared themselves into plateaus, the shallow seas were hurled into deeper beds, and though the Mediterranean again became a sea, yet there was even more land surface then than there is to-day.

"With this upheaving, came the First Age of Cold. The coal-forests died, the pine-trees took their places. The marshes became plains. Nearly all species of life belonging to that warm age died. The Empire of the Fishes and Amphibians ended. The Mediterranean slowly diminished in size and again became an inland sea, while in Europe to the north, Africa to the south and in America, beyond the Atlantic, the Empire of the Reptiles began.

"The Middle Ages of the Earth had come, known as the Mesozoic Era. The Mediterranean held its place as an inland sea, as one might well expect, since it was sea during the Permian times when most of the world was high, but all through the Triassic—which is the first Period of the Mesozoic Era—the land began to fall, and before it was over, the Mediterranean joined the Atlantic once again. Slowly the land fell further, the sea spread out vast arms of warm water; plants and animals increased. By the Jurassic Period there was marsh again from Norway to Africa and the huge dinosaurs became the masters of the world, living on the islands and peninsulas in the midst of that shallow tropical sea.

"Yet the slow death of cold which had awaited the Fishes and Amphibians in the Permian Revolution was awaiting the Reptiles also. The Second Age of Cold was near. After the Cretaceous Period, the land began to rise, until, when hundreds of thousands of years had elapsed, the northern part of Europe was elevated, the Mediterranean lost its opening to the ocean, and became once more an inland sea. Then came the Second Ice Age, the second cataclysm of want and death. The Pterodactyls died away completely, the huge reptile monsters fell by thousands and all the giant Saurians had to give place to the warmer-blooded mammals.

"So came the Age of New Life, the Cenozoic Era, of which only the first portion or the Tertiary Period concerns us now. During the Eocene Epoch began the leveling and wearing away of the land raised at the end of the Age of Chalk. Almost to the Equator, Africa was flooded. Italy, Turkey, Southern Russia and Asia Minor sank. The Atlantic and the Pacific joined then, as they would not be joined again for millions of years to come, when Man should pierce an isthmus at Panama.

"Then, after the Oligocene Epoch, the mountains of to-day began to rise. Through the Miocene and Pliocene Epochs, the Atlas Mountains, the Alps, the Pyrenees, the Apennines and the Caucasus rose above the plain, and the floor of the Eocene ocean is found to-day ten thousand feet above sea-level in the Alps, fifteen thousand feet above sea-level in the Himalayas, and twenty thousand feet above sea-level in Thibet. And, Perry, as the land rose at the end of the Pliocene Epoch, and the Pleistocene Epoch began, tropical beasts and plants fled to the Equator, snow gathered on the newly made mountain ranges, glaciers glittered on their flanks. The Third Ice Age had come, the beginning of the Quarternary or Modern Period. Nor is the Third Ice Age yet past, for it is only recently that the shrinking of the ice has allowed Man to stand on the North and South Poles of the globe."

"Perry!" suddenly rang out a cry, with a note of strident urgency, "get me my field-glass, quick!"

Wondering, but realizing the note of haste in the command, the boy jumped into full stride along the deck and down the companion way. He was back in half a minute, taking the glass out of the case as he ran. Already the rail was crowded with figures, but they made way for him. He handed the field-glass breathlessly to the professor, and looked, with an intensity that made his eyes burn, in the direction whither the binocular was pointing.

"It's a boat," he said, "a little boat; no, two boats; no, three—"

He clutched his uncle's arm.

"Those aren't boats—" he began, and stopped.

About a quarter of a mile away, the even blue ripples of the great inland sea were broken by something black that seemed to be advancing on the ship, moving on a line that converged upon the vessel's course. Excitement sent the boy's heart thumping like the engines of the steamer, and when, a moment later, without a word, his uncle handed the glass to him, his hands shook so much that he could hardly focus the instrument.

There leaped into view, in the field of the glass, a broad head, something like that of a seal, but poised upon a thick, long neck. He could have sworn there were long coils behind, but he could not see them.

"The *Dædalus*—" he half panted.

"My camera!" came a second crisp order.

Perry handed back the glass, which the professor almost snatched from his grasp.

If the boy had hurried the first time for the binocular, he made the decks burn on his second trip. He knew that the professor's big camera would take valuable time to unpack, so he fairly raced along the stateroom corridors to his own cabin for his own small camera, and he thanked his lucky stars, as he ran, that he had put in a new roll of film that morning.

He could not have gone faster, but, when he returned, his uncle was sweeping the horizon with the glass in a way that showed all too plainly that the object of search was no longer in view.

"Gone!" he cried, in apprehension.

"Yes," said the professor, "gone!"

"But it must be there! We both saw it!"

"I thought I saw—"

"There! Uncle George! Over there! There it is again!"

Perry pointed almost directly abeam of the vessel.

The scientist looked, and shook his head.

"You try," he said, and handed the glass to the boy.

The lad rested his elbows on the rail to steady his shaking hands, but whatever the object was that he thought he had seen, he could not find in the glass.

"If I'd only had my camera with me!" he mourned.

"It was too far away for anything to have shown on the plate," his uncle responded, "and, perhaps, there was nothing there to show. Light plays some strange tricks sometimes. The records of the sea are full of just such appearances as this. But they are never near enough, or exact enough, for science to use. Still, you're beginning young, Perry, and maybe you'll be the first to catch him."

"He might come up again," the lad cried eagerly.

"He might," was the guarded reply.

But, though from that time Perry scarcely left the ship's rail, even for meals, until the ship was docked, and though he slept with field-glass and camera within his grasp, the sea-serpent, if such it was, was seen no more.

CHAPTER V

THE MAD ARTIST AT THE SPHINX

"One of the Seven Wonders of the World stood there, Perry," said the lad's uncle, as the steamer came into the port of Alexandria, pointing to a small mosque with lofty pointing minarets, on the little island of Pharos. "That is where the Pharos was built, the first of all the large lighthouses of the world."

"I've seen pictures of it, Uncle George," responded the boy; "it didn't seem so very wonderful."

"Yet it was the first," the scientist reminded him, "and in those days, the Mediterranean was as much dreaded as Cape Horn waters are to-day, and more. Upon that little island stood Man's initial challenge to the elements. Before it was erected, a sailor could only reach harbor in daylight and when the elements were kind, but after the building of the Pharos, Man's will blazed high above the fury of the storm. It was the fiery sign that Man was greater than the tempest and flaunted his defiance to the angry waves."

"The first to dare—" said the boy, feeling his pulse quickening; "yes, that does make it great."

"To me, that is the spell of Egypt," continued the scientist. "Everywhere, in this old land, one has a feeling of a world which dates back so long ago that to the dwellers of that time, the simplest things were a reckless adventure. They blazed the trail for civilization, those ancient Egyptians, and the thrill of the Valley of the Nile lies in the fact that one can see those blaze-marks still."

"Where?"

"Everywhere. Not only in the temples and the pyramids, but in the people themselves. It is a haunted land, Perry, haunted by Pharaohs as other lands are haunted by fairies, and the spell always holds fast. I have been here before, and still I am almost as eager as you can be to step ashore in Egypt once again."

"It's all so new to me," the boy said, hungrily.

"It won't seem new," his uncle rejoined. "Once you have known the call of Egypt, you will feel as though you were returning to a long-forgotten home. You will see. But you will not feel it in Alexandria. You must wait."

The warning not to expect too much of Alexandria came in time to save Perry from a grievous disappointment, for, as he confided to Antoine, a few hours later, during all the yelling bustle of docking and customs examination, commercial Alexandria was not an Egyptian city at all.

"It's like Genoa," the boy remarked, half-indignantly, recalling that busy port at which the steamer had stopped for a few hours on the way down the Mediterranean, "and I haven't heard a word of anything but Italian since we landed!"

His tone implied that he was being cheated, and his friend laughed.

"Yes, yes, Alexandria isn't Egyptian," he said. "It wasn't built until long after Egypt's glory had decayed. The time of Alexandria's greatness was when she was a Roman colony, and Rome is Italy."

"Well, I want Egypt!" declared Perry, with the characteristic insistence of his years.

"You'll get plenty of 'Egypt,' as you call it," his friend cautioned. "I shouldn't be at all surprised, Perry, if, in the desert, you didn't wish many a time for this climate of Alexandria, where it can be cool and rainy and where even wildflowers grow." He pointed to some flowering weeds. " You'll be hungry for a sight of something fresh and full of life like that before you've finished this trip."

" P'raps! But I don't care how soon the desert comes," insisted Perry. " I don't think much of this!" And he awaited with impatience the starting of the train to Cairo.

Soon, however, his mood changed. As the train cleared the villas of the suburbs of Alexandria, skirting the coast, curved round the northern edge of Lake Maryut and struck across the Delta, his momentary peevishness at the non-Egyptian character of Alexandria vanished. A glimpse of a stream with a forest of masts and yards that looked like things of a dream, so slender were they, wrung from him an exclamation of astonishment.

" Look, Antoine," he said, " there's the old Nile!"

" No, no," answered the other, " that's the Mahmoudieh Canal. And it's not old, it's quite new, not a century old yet. It is the canal that has made Alexandria the principal port of Egypt instead of the old Egyptian ports of Rosetta and Damietta. The traffic on the canal is exceedingly heavy."

"And are those spidery things the masts of ships on the canal?"

"Why not?"

"They look as if the first puff of wind would snap every one of them."

"Yet they are masts, Perry, the spars of the gyassas or barges. They do look as though they were made of spider webs, but I suppose they must be strong. All the Nile barges are built that way."

The tall gyassas partly comforted Perry for the noisy bustle of the Alexandrian wharves, but his content was complete when, as the train turned to the southward, he saw in the distance a camel outlined against the sky-line. He felt that at last he really was in Egypt.

The train was bowling along rapidly over the outer stretches of the Delta and its alternate patches of desert, marsh and cotton field, with a few mud huts here and there, when, even above the clatter of the train, there came a hideous squeaking rattle.

"What in the wide world is that racket!" he ejaculated.

"Probably a sakiyeh," was the reply.

"What's a sakiyeh?"

" An old water-wheel. You'll see it in a second."

Then, a moment later, his friend added,

" I thought so," and pointed to where a fellah, or laborer, in his blue galabeah—which Perry inelegantly declared to be a nightshirt—stood beside the creaking water-wheel while a water-buffalo toilsomely trod round to raise the water to irrigate the land. The fellah looked up as the train sped by, and thus Perry caught his first glimpse of peasant labor.

" When Joseph was sold by his brethren into Egypt," remarked Antoine, " he probably saw sakiyehs being worked just that way. Very little has changed since."

" And those mud huts? "

" The Children of Israel made bricks without straw," the other reminded him. " Bricks are only baked mud."

Perry stared out of the window, thinking. What the professor had said, came back to him—" blaze-marks along the trail to civilization." That was the trick of Egypt.

The landscape was flat and uninteresting. As the train sped on, there was less desert and less marsh, the cultivated cotton fields grew thicker, there were more mud huts. Here and there a cluster of huts centered around a small mosque, with its graceful minaret. Occasionally small structures—which Antoine told him were saints' tombs—broke the level, but aside from these, the lands of the Nile delta were level and monotonous. Yet, in spite of all, they were curiously vibrating, and after a while Perry realized that this was due to the sun, which flooded the country with a light so intense that it seemed brighter than sunlight.

The train roared across a sluggish stream, with a gyassa in full sail upon it.

"The Rosetta branch of the Nile," said Antoine.

Perry had nothing to say. It was not the picture he had formed in his mind of the Nile, but there was something about it, something incalculably old, as though the river were very aged and had fallen asleep. On the other side of the Rosetta branch, all the land was under cultivation. Cotton-cleaning mills, dotted here and there, took away even the quiet romance of the first part of the journey, and Perry was glad when at Bulak they crossed the Nile proper and the train sped swiftly on its way to Cairo.

"Don't get disappointed in Cairo right away," said Antoine to him, as they neared the suburbs. "Cairo is one of the most picturesque cities in the world, but not around the railway station, nor near the hotel. We're going to be in Cairo several days, so you will have a chance to see all you want of it."

But this time Perry was not disappointed. The railway station could not be other but modern, but in the throngs about it there was so much movement, so much color, so much flavor of the East that the boy breathed a great sigh of relief. It was all true. He was not dreaming. The world of the Orient was not all made new. The City of the Arabian Nights was still full of mystery. He climbed into a two-horse arabeah with Antoine, all a-quiver with excitement, was driven to the hotel, and, after the four-hour journey in the train, was eager to be up and doing.

At lunch his uncle said,

"Perry, I am going to be busy all this afternoon, and if you want to do some sight-seeing, now's your chance. I'll leave you in Antoine's charge, and you'd better stick close to him, for Cairo's the easiest city to get lost in that I know."

He turned to Antoine.

"You know Cairo, I think?"

"Many years ago I knew it well," the other answered.

The professor smiled.

"If you had known it well many hundred years ago," he said, "it would do just as well. The places worth seeing haven't changed."

Once out of the European section, and in the Arab quarter, Perry found the real city of his imaginings, with its queer crooked streets, blind walls and a maze of windows masked with wooden trellis-work through which one could look outside from within, but not inside from without. Perry plied Antoine with questions almost without ceasing, and it was a very weary guide who safely deposited a much-excited boy in the hotel shortly before dinner-time. The lad was eager to go out again in the evening, but sleep took precedence, and he rioted in dreams till morning.

The next day, again with Antoine, Perry went to see the great citadel, which had been built by Saladin, the Saracen conqueror immortalized in "The Talisman." He visited the great Mohammedan university, entered a score of mosques, in every case leaving his shoes outside as is required by custom, and took particular delight in one old place known as the "Needle's Eye," which had been walled up recently.

"Why was it closed, Antoine?" he asked.

His informant smiled.

"There was a tradition," was the reply, "that although it was quite narrow, every one who was honest could squeeze through. Ismail, one of the governors, was very stout, and, evidently having more faith in the laws of physics than in superstition, decided that he would not put his reputation for honesty to the test of his bulk. Accordingly he had it walled up."

Under Antoine's guidance, Perry quickly saw most of the worth-while parts of Cairo, and his cup of delight brimmed over when his guide secured permission for him to see Cairo at night, and took him through the old bazaars, agleam with light and merriment. Antoine skillfully guided him through the unspoiled native quarters, and avoided the half-and-half tourist section where a forced and unnatural gayety gives strangers a false idea of the old capital of Egypt under the caliphs.

"Perry," said his uncle to him the following morning, "you'd better come along with me today. I've had good news. The Survey is going to lend me much of their equipment and one of their experts will accompany us. The Viceroy has been exceedingly kind and given me every opportunity I could have wished, and instead of being compelled to spend a week in Cairo, we're going to start over the desert to-morrow."

"How are we going, Uncle George?"

"On camels."

"On camels!" Only the fact that he was attached to a Museum expedition kept Perry from doing a war-dance on the spot. "And am I going to ride on a camel?"

"You're certainly not going to ride on anything else. What do you suppose you're going to ride, a broncho? You seem to forget that this is Egypt, my boy."

"But a camel, a real, live camel. Gee!"

"Maybe you won't like it so well after a while," retorted his uncle with a grim smile. He had ridden camels before.

"Oh, won't I!"

"We'll see to-morrow night."

"Why, Uncle George? Do they buck?"

"I never saw a camel try to buck," the professor answered. "On the whole, I think it's fortunate they've never learned the trick. Here's the camel market now. Tell me what you think of them, Perry."

It might have been the camel market, but it sounded like Bedlam. No sooner did the professor appear than the camel-drivers were round him like a swarm of flies, and the Egyptian Survey expert, who had arranged to meet him there, had to shoulder the natives away like sheep in order to get through to his friend.

A nearer view of the camels decided Perry that the Ship of the Desert did not look nearly as peaceful in real life as in pictures. The beasts had an ugly trick of lifting the upper lip and showing big teeth that was quite disconcerting. Nor did the boy fail to note that a number of the camels were strongly muzzled.

"Do camels bite, Uncle George?" Perry asked, as soon as the palaver was over, and the Survey expert had not only chosen the camels he wanted but also driven off the men who had not been hired—a much harder task.

"Some of them do," was the reply. "A camel can be one of the most vicious beasts of burden in the world. You remember Kipling's famous verses about the ' 'oont, the commissariat 'oont?' "

"No," honestly answered Perry, "I don't."

"Learn them when you get home," advised the professor, "there's probably a copy in the hotel library. It'll give you something to say to-morrow, when you want to express your feelings. I know camels!"

"Never you mind, Perry," said the government survey expert, who was to join the expedition, a keen young fellow named Arnold Wyr, "I've picked out a bunch that won't give much trouble. But your uncle's right about camels. As a general rule, they're a jolly mean beast to handle. Still, desert work is impossible without them."

"Couldn't donkeys do instead?"

The other shook his head.

"A donkey can get along on poor pickings, when it comes to food, but he's got to have water, you know. No, for desert work, the camel is the only creature that can stand it. A day without water doesn't hurt a camel, but it will cripple a donkey and kill a horse. The camel is well-enough suited to his job, but he's not a bally arm-chair. I hope you're jolly well seasoned."

"Why?" asked the boy.

"Because you need to be, in order to stand your first few hours on camel back. You'd better take a jolly good rest to-day."

"I wasn't planning to rest to-day at all," responded Perry. Then, turning to the professor, he continued,

"Uncle George, when are we going to the Pyramids?"

"I'm sure I don't know, now," was the reply. "I had planned to give to-morrow to sight-seeing, but as we shall be able to start for the desert to-morrow, thanks to the courtesy of the Egyptian Survey, I think I'll give up the idea of visiting them now. Perhaps we'll have time on the way back."

"Are we going to be anywhere near the Pyramids to-night?"

"Right at them. We're leaving this afternoon for the hotel close by. The caravan will meet us there in the morning."

The boy looked impatiently toward the expert, who was still wrangling with a camel-driver.

"I wish Mr. Wyr would hurry," he confided to his uncle in a low tone. "I want to get out and see the Pyramids."

In spite of the lowering of the tone, however, the other heard him.

"Sorry, but there isn't even any word for 'hurry' in Arabic," he said good-humoredly. "You're like the rest of the Americans, Perry, you jolly well want everything done at once. In the East, you know, you've got to use the methods of the East."

"I didn't mean to intrude," said the lad, flushing, "but I do so want to go. It's all like feeling a dream come true."

"There is a great deal of that feeling, I think," said his uncle, coming to the boy's aid. "I know, I, for one, feel strange. I suppose if this were merely a pleasure trip, the hiring of camels and so forth might seem more or less natural. But, after all, this is an American Museum expedition for fossil-hunting, and I've equipped a score of expeditions for just such purposes, out West. There, Mr. Wyr, it would seem quite natural to hire cow-ponies or mules in some little jerk-water town, where there would be nothing but a bunch of frame houses, a general store, a couple of churches and half a dozen saloons. Two or three cowboys riding in from the range, shooting up the town, wouldn't surprise me a bit, I'm more or less used to that. But these bazaars of Cairo are so far removed from that picture that I can hardly believe that I'm really equipping a paleontological expedition."

The Englishman smiled understandingly.

"I should feel the same way if I were out in your Wild West," he said, "and a few 'cowboys, shooting up the town,' as you call it, would seem to me jolly well like a circus performance. I should be as much out of it making arrangements there, as you feel here. But I think you'll find, Dr. Hunt, that the men and animals I have hired will be satisfactory, that is, as satisfactory as can be expected in the East. We're not what you call 'hustlers,' in Egypt, you know."

"I think you English have done wonders," the scientist replied, "look at the Assouan Dam," and the talk drifted into the ever-important question of the irrigation problems of the Nile.

Perry was impatient, but he did his best not to show it, and in the meantime was thinking hard. As soon as the party returned to the hotel, he slipped away and had an earnest conversation with one of the hotel guides. He turned up at lunch half an hour later, with a suspiciously innocent look. His uncle, who had begun to understand the lad, said to him suddenly,

"What have you got up your sleeve, Perry?"

"I was thinking," the boy answered, "that, if you didn't mind, I'd like to go over to the Pyramids this afternoon."

"With Antoine? Certainly. Why not?"

"Antoine's busy," Perry responded. "I wanted to go alone."

The professor shook his head dubiously.

"But, Uncle George," pleaded the lad, "I could take the trolley right there. It's quite an easy trip and I can join you at the hotel for dinner."

"What do you think, Antoine?" queried the leader of the expedition, and Perry felt easier, for he knew that Antoine always was on his side.

"He cannot get lost, Dr. Hunt," said the other, "it is a straight, broad road all the way."

"All right, then," said the professor. "Antoine knows this part of the world. Go ahead! I wouldn't like to let you roam around alone in the Arab quarters of the city, but aside from that, you're old enough to go where you please. Only, don't forget that you're to join us at dinner at six-thirty."

The rest of Perry's lunch took but a few moments to swallow and he excused himself from the table in a hurry. He had hardly unpacked anything in Cairo, so it was only the work of a minute or two to put back in his suit-case the few articles that had been taken out. He took it to his uncle's room, left it with the other luggage that was to be sent that afternoon to the hotel beside the Pyramids, and was off. He boarded a trolley car for Ghizeh, but left the car after crossing the Nile, at the opening of the great road bordered with shade-giving lebbek trees that leads straight from Cairo to Ghizeh. One of his fellow-passengers remarked that it wasn't considered wise in Egypt to walk when there was a chance to ride, but Perry, with American independence, decided that he would go ahead in spite of any advice, however well-meant, and set out alone along the road.

There is, perhaps, no well-trodden road in the world more picturesque than the road between Cairo and Ghizeh. From all the deserts to the west come the caravans to Cairo, the old capital of Egypt throughout the centuries of Mohammedan rule. This was the first time that Perry had been alone since his arrival on the shores of Africa, and the spirit of adventure was strong upon him.

There came towards him a long train of camels, heavily laden, bringing loads of dates from some oasis far beyond the horizon. He longed for a knowledge of Arabic that he might be able to question the white-robed leaders of the camels concerning their lives beyond that waste of sand; and started, with a sudden shock, as a loud " honk honk " behind him caused him to turn and see a motor-car of the very latest model come racing by.

He met itinerant cooks, carrying their kitchens with them, ready to squat on the roadside and cook a meal for a hungry passer-by, and the boy had to rub his eyes when he looked from them to the gleaming metals of the trolley-car line. An Egyptian cavalry officer, resplendent in gold lace, cantering towards the town, smiled at the trudging lad, while fellahs in tarboosh and galabeah stalked by unheeding. Here and there a hadj or holy pilgrim passed, his green turban showing that he had made the pilgrimage to Mecca, the place of Mohammed's death. For quite a space the road seemed to be the highway of the orient alone, and then there came towards him a carriage, with two prettily gowned women, probably, Perry thought, the wife and daughter of some English Government official, and these, too, smiled at the lithe American lad swinging along with eagerness and wonder in his step.

The shafts of white light, as they pierced between the interstices of the trees were dazzling, so bright, indeed, that the light seemed to hide rather than to reveal. Perry overtook an old man, evidently an artist, with portable easel and canvas, who was walking slowly, very slowly, along the road. He had not passed him more than five minutes, when, before him, at the end of the road, seen through the long line of trees, a faint blue object shimmered against the deep-blue sky. In the hot and wavering air it seemed to float. The boy stopped dead.

Little by little, as his eye took a steadier focus, the Great Pyramid of Cheops revealed itself to him, as do scenes in misty pictures. He stood rooted to the spot.

A hoarse voice, that yet seemed to have a child's eagerness in its tones, spoke over his shoulder.

"What does it make you think of?" said the voice.

"It's like Euclid turned into music," responded Perry, half turning to the old artist, who had overtaken him as he stood gazing at his first sight of the Pyramid.

"H'm," said his new friend, looking at the boy. "That's quite an intelligent reply."

He walked on, and Perry, struck by something very likable in the old artist, fell into step beside him. For at least ten minutes neither spoke, and then the artist repeated,

"Euclid turned into music! H'm."

He turned to the lad suddenly.

"You paint?"

"Not a scrap," answered the boy, "I can't draw for sour apples."

"American!" ejaculated the artist, noticing the turn of the expression. "H'm."

A trolley-car whizzed by.

"Why aren't you on that rattle-bang tram?" he demanded.

"Didn't like the idea," the boy replied simply. "Too much like going to church on roller-skates."

"H'm," was the artist's only reply, but the boy could see that he was pleased.

"Are you disappointed?" was the artist's next query.

"In Egypt?"

"No. In *it!*"

He pointed to the pyramid at the end of the road before them, its outlines shining clearer as the sun sank, lengthening the shadows of the trees before them.

"It looks smaller than I expected," Perry replied truthfully, although he suspected any criticism would hurt the artist's feelings.

"That's because of its shape. You'll find it seem huge, near by."

The two walked on together in silence.

"Are you going to do a picture of the Pyramid?" Perry asked, after a long pause.

"Perhaps," the other answered. "I am waiting."

He did not seem to want to talk, and, as they tramped along the avenue of lebbek trees, Perry fell silent also. His companion was one of those men whose friendship is felt as much in silence as in speech, and the two went forward happily together.

Half a mile further on, an Arab stopped the artist, and spoke gravely in Arabic. Hearing that the reply was also in Arabic, Perry strolled on slowly. The artist caught up to him again before long.

"You speak Arabic?" queried the boy.

"H'm, yes," the other answered. "I have

to speak it; none of them speak the old Egyptian here."

"Do you?"

"Yes. H'm. It is necessary. I am waiting."

Perry wondered what it could be for which the old artist was waiting, and he realized that his neighbor was eccentric, if not, indeed, a little queer. But he liked him tremendously, just the same.

As the lebbek trees stopped, the road swerved round and led to a big building which Perry at once recognized to be the hotel, but the artist struck off by a path to the side, out toward a clump of date-palms. There he stopped. Before them, now sharply outlined, stood the three great and the six smaller pyramids of Ghizeh, and silhouetted against the sky, near the Second or Cephren pyramid, was the bold block of the sphinx. A feeling stole over Perry that the artist was praying, and he wondered. But it was not a question that could be asked.

For at least half an hour, the artist stood there, motionless. Perry fidgeted, impatient to press on, but he could not find the heart to leave his new-found friend. At last the artist picked up the canvas that he had leant against one of the palms, and started on. Following a path that the boy could hardly trace, he skirted to the southward of the group of pyramids and halted at last, beside a flat boulder, about two hundred paces from the Sphinx. Stooping, he drew from under the boulder a tattered blanket which he laid on the stone, set up his easel, a little to his left, not as though he were going to work, and fell into a brown study. Twice Perry spoke to him, but received no answer. At last, deciding that his presence was no longer welcome, he said:

"Good-bye, and thank you."

"H'm," replied the artist, breaking the long silence. "Euclid turned into music. H'm. I shall be here to-night," and relapsed into contemplation.

By this time the afternoon was drawing on and Perry realized that if he wanted to see anything of the Pyramids, he had better hurry. As soon as he came near, he was assailed by a hideous outcry of guides and donkey boys, clamoring for employment and for baksheesh—in other words, begging—to all of which Perry turned a deaf ear until an athletic young Arab, with snapping eyes, said in good English,

"Want to go to top?"

"You bet," replied the lad, then, seeing that this was not understood, continued, "Yes."

"Twenty piastres," the guide demanded.

As Perry had learned that a piastre was worth only a trifle less than a nickel, he did not deem a dollar too much, and promptly agreed. Whereupon the guide called, and another equally athletic Arab joined them.

"Twenty piastres," he said in a mournful voice.

Perry protested. For all he knew, the whole tribe might come around demanding the same twenty piastres, and the lad's purse was slim. His father had given him enough spending money, but by no means too much.

"Twenty piastres to this one," he said, pointing to the first Arab who had spoken to him.

"No go alone," was the reply. "Always two."

Perry hesitated. After all, was there anything he wanted to do more than climb that Pyramid? He decided that there wasn't, and let go his second dollar with a good grace.

And then they started.

It had never occurred to Perry to think what climbing a pyramid would be like. In the distance, truly, the blocks seemed like large steps. But no sooner was the lad fairly on the ledge from which the pyramid rises, and looked upward, than his heart gave a bound. The Pyramid seemed miles high! He turned hesitatingly to the guide.

"I've got to be back by—" he began, when each of the Arabs grasped him by an arm and jumped upwards.

The first leap was nearly five feet high!

As the Arabs dragged him up the face of the stone, the boy felt as though his arms would come clear out of their sockets. A final jerk brought him on the stone. Again a swing and a leap, and he found himself scrambling up another block, again almost five feet high. A third stretch, which he tried to open his legs to reach, as though he were a pair of scissors, felt as if it were going to split him in half, and he found himself already out of breath.

"Wow!" he said, feeling that he would give a good deal to have a hand free to rub himself.

"Eoie!" cried the Arabs and swung him up another of the great boulders.

"But look here—" began Perry, seeking to gain a moment's breathing space.

" Easier by-'n-by," answered the Arab who had first spoken to him. " Eoie! "

And up he went again.

Perry remembered that he had read how, throughout all the ages, people had wondered in what way the builders of four thousand years ago, who had no machinery, had managed to raise these huge stones, for the lower courses were four feet ten inches high and sometimes eight feet long. Even the upper stones were little less than three feet.

" Eoie! " cried the Arabs, and he took another flying leap.

" That's only six out of two hundred and three," said Perry, half aloud, and he wondered whether he would get to the top as a complete boy or as two half boys. But, after another dozen jerks, which made Perry feel as though he were a cross between a grasshopper and a kangaroo, they reached the part of the pyramid where the steps were only three feet high. As his eye caught sight of them, the boy felt easier in his mind. Now he could get his breath.

Did the Arabs spare him? Not a bit.

" Eoie! " they cried, and increased their speed amazingly.

"I'm—I'm not trying for—any—record!" panted the lad.

Much the Arabs cared what he said.

"Eoie!" they cried, and their lithe brown legs flashed upwards.

Perry set his teeth and said no more until they reached the top.

The ascent took less than twenty minutes and when at last the Arabs let go his arms and the boy had a chance to breathe, he felt quite satisfied that his guides had earned every cent of their twenty piastres. The top was a platform about thirty feet square, caused by the loss of the old apex of the pyramid. The view was magnificent, and Perry, looking down, four hundred and fifty feet below and a quarter of a mile away, saw, looking not much bigger than an ant, the old artist in contemplation before the Sphinx.

The descent was even more sensational. Perry counted himself in good training and had a nervy head. In spite of that, a dozen times he was sure the Arabs would lose their footing and roll on down, smashing from ledge to ledge. Realizing that they had an athletic patron, and eager to get down again in the hope of finding other customers, the Arabs took that fearful stairway in a series of leaps that would not have disgraced a delirious chamois, but they delivered Perry safe and sound at the bottom, out of breath, wild with excitement, and unfeignedly glad to get back to solid earth once more. Yet, as he turned back for one last look at the Great Pyramid of Cheops, before entering the hotel, Perry knew that he would like to climb it again next day.

"Uncle George," said the lad at dinner, after telling of his pyramid climb, "I met a queer old artist to-day, on the road. I liked him heaps," and he proceeded to tell of his meeting and of the way in which the artist had settled down to meditation on a boulder in front of the Great Sphinx.

"That must have been Quinward, Mad Quinward, they call him here," said Wyr, who was to accompany the expedition. "I'm surprised that you liked him. He's usually jolly wrathy when people disturb him."

"He was as nice as pie to me," said Perry. "Why do you call him 'Mad Quinward'? He didn't seem the littlest bit mad to me. I did think him queer, but heaps of worth-while folks are that."

"But he's jolly odd, you know, Perry," said the other. " He's lived in Cairo for twenty or thirty years, perhaps more, and he's always going to paint a picture of the Sphinx. He goes there, every day all these twenty years, and he's never painted a line yet."

" Perhaps he can't paint, Mr. Wyr," suggested the boy.

" Oh, yes, he can. He's one of the very best we've got. Some of his work on the old rock-mosques can't be equalled by anybody. But, you know, he can't be bribed into doing a picture of the Sphinx or the pyramids. He's been offered some jolly big sums, quite a pot of money, you know, for an artist chap. But he always makes the same reply—"

" ' I am waiting,' " queried the boy, " is that it? "

" That's it. But what it is that he is waiting for, no one knows, unless it's inspiration. And I should jolly well think he ought to know, after twenty or thirty years, whether he can get an inspiration or not."

" He seemed mighty interesting," rejoined Perry. " He told me he knew Ancient Egyptian."

" He does," Wyr responded. " Oh, yes, there aren't many people around Cairo who know more about Egypt than Quinward. But you must have touched him in a tender spot, Perry, for generally, he's awfully like a bear."

"P'raps it was because I didn't bother him an awful lot," said Perry. "Anyhow, he half suggested that I should go to see him this evening."

"Well, why not?" said the professor. "If this artist friend of yours is as well-informed as Mr. Wyr seems to think, get him talking about Egypt and then you can tell us all about it."

"Won't you come along, Uncle George?" suggested Perry.

"No, lad," the professor replied. "I'm sorry to say that I've got to get back to Cairo to-night. Two or three things have come up that I want to look after, in order to have everything clear before starting off in the morning. I've been over the Pyramids before, Perry, you know, and it's an old story. What I want to see is fossil elephants! Compared with those, my boy, the Pyramids are very young."

"Oh, we're going to find heaps of fossils that no one ever saw before," asserted Perry, with a buoyancy so infectious that the two men laughed.

" But just now, I'm after Pyramids. Fossil elephants, later."

" Put your heavy coat on, then, Perry," the Survey expert advised him, as they rose from the table. " If you're going to sit on the sand with Mad Quinward, you'll find that it gets jolly cold here at night."

A lurid glow as of a volcano's reflection was all that the sky still held of the sunset when Perry reached the boulder where he had left the artist. Mad Quinward, as the boy had come to know him, was still sitting on the rock, but he, also, had been having dinner, for he was putting into one of his capacious pockets a flat tin food-box, and into another a flask. Seeing the boy, however, he unhooked the lid of the box, sprinkled some salt over a crust that remained, and gravely handed it to Perry.

" Bread and salt," he said.

The boy took it gravely, remembering the old custom that whosoever has accepted bread and salt at your hands has thereby cemented friendship, and munched the crust in silence, feeling something very fitting in this ancient oriental rite in the presence of the Sphinx as the day died down.

The crimson faded out of the sky with the last crumb of the little ritual meal, and then Perry saw, for the first time in his life, the up-coming of a night in Egypt. The darkness hurled itself after the sunset like a battle-charge, and within a few seconds, the palm-trees that had been dark green in the glowing sunset, loomed like black sentinels against the sky. The stars, as though in panic at the darkness, leaped into full brilliancy, and a bright star-shine gleamed where the sunset had been but a moment before. The transformation was so sudden as to seem almost theatrical.

The artist unfolded the tattered blanket on which he had been seated and threw one-half of its length upon the sand, motioning to Perry to sit down. The boy did so, feeling the heat of the sun-warmed sand beneath him and, taking his cue from the artist, lapsed into silence. It was some time before Mad Quinward spoke.

" Nearly five thousand years ago," he said, in a low, thoughtful voice, " there came a wise man to the old city beside the Nile."

He stopped, and in the pause Perry felt himself slide into a reverie of life as it was in the days of the Pyramid-builders.

" A Chaldæan mage he was, of the land where the seven-storied towers stood wherefrom men watched the stars."

And Perry, answering nothing, looked at the constellations. From where he lay, the studded belt of Orion gleamed directly over the Sphinx, and, as he watched the slow circling of the stars, he thought how they circled in the same path thousands of years ago.

And so, through the evening, and into the night, artist and boy sat there, sat there till the sounds from the hotel died down; sat there till even the barking of the Egyptian dogs was stilled; sat there silently, save for a sentence now and then from the slowly-moving lips of the old artist. And gradually, by word and influence, Perry slipped his own aggressive personality and became at one with Egypt and the night. Little by little, the story wove itself into his brain, while the Sphinx and the Pyramids stayed moveless and the restless stars swung on.

"He saw the follies of the temples and prophesied their fall—he stayed the Pharaoh in his chariot and mocked his power—he laughed to scorn the colossi of the gods—he flung in every face the eternal question: 'What is Man sent on earth to do?'"

Again came silence.

" And Pharaoh led him to a mass of rock upon the desert—' Carve there a Sphinx!' he said, ' with face like to mine own. Thou wert sent here to build my greatness, in spite of all thy wisdom.' "

The stars swung slowly on.

" For years he toiled— A thousand workmen quarried and labored at the body—the face was his alone— Always it was covered with a veil— Behind that veil he worked—within that veil he slept—and no man saw the graven face behind the veil."

Midnight had long gone by and the chill of a night half turned to morning numbed Perry to his bones, but he hardly dared to move, lest he should break the spirit that had gripped the watcher—the watcher who for twenty years and more had never failed to see the stars circle above the Sphinx. Almost an hour passed before the artist spoke again.

" There came a day that all was finished— A runner went to Pharaoh, and the Pharaoh came— Over the figure's face was still the veil— The sun shone pitilessly and the desert shimmered with the heat.

" They tore away the veil—"

Upon the dark desert settled an expectant hush.

" Over Great Pharaoh, the Greater Sphinx smiled in a splendid mockery.

" ' Great Pharaoh,' cried the sculptor, ' I was sent here to mock thy little greatness, not to build it.'

" The Pharaoh raised his finger— The spears struck home— And over the dying sculptor, the mocking Sphinx smiled still."

The glint as of a black pearl over the East told of the approach of day.

The artist clutched the boy's arm.

" It speaks," he said, in an awed whisper, " at last it speaks! "

The dawn trembled closer, and, in the utter distance, a bird's faint notes were heard.

" You hear—"

Not for the world would the boy have said that the sound the artist heard was but a bird singing to the morning.

" I hear," he answered.

The sun thrust up a beam of welcome, and with the first long, level ray, the artist sprang to his feet. He snatched the canvas that for twenty years had never known a brush and feverishly, madly, began to paint.

Color and line grew like a swifter life upon the canvas, strokes so rapid and so sure that the eye could scarcely follow them as they gave birth to form. The day was not yet an hour old when the artist laid down his palette.

"It is done!" he said. "It was well to wait. There is the message of the Sphinx!"

And, dropping his brushes on the boulder, the artist threw himself upon the ground, and, in a moment, was asleep.

Cramped and stiff, Perry rose and stretched himself. The sun rose over the lebbek-trees, warm and comforting.

Two tourists, early risers, coming from the hotel, strolled over to where the boy was standing. Seeing that they were about to speak, Perry held up his hand.

"Please!" he said softly; "he's asleep."

The first looked at the artist, recumbent on the sand.

"Why, it's Mad Quinward!" he exclaimed.

The second looked at the picture. He removed his helmet, as though entering a shrine.

"That will be deemed one of the world's great masterpieces," he said reverently. "You saw him paint it?"

Simply, the lad replied:

"I have been here all night."

CHAPTER VI

ACROSS THE DESERT ON CAMEL-BACK

THE sun was high before Mad Quinward awoke, Perry staying beside him faithfully. The news of the great picture had spread, and when the artist roused himself, he found himself the center of a crowd. Many people pressed forward with congratulations, but the painter seemed dazed and silent. The boy urged him to come to the hotel for breakfast, an invitation warmly seconded by Dr. Hunt, for the professor, as fully as any one, had realized the wonder of that canvas, painted in an ecstasy during the first flush of an Egyptian sunrise.

But Quinward, never again to be called " Mad " Quinward, strapped up his little easel, took the canvas—which had been blank for twenty years, and now had blossomed into so marvelous a work, and with a word here and there, turned to the lebbek-bordered road and trudged back to Cairo. Though less than a day had elapsed since Perry first met him, the boy had a pang of loneliness when he saw the artist go.

"You'd better get a nap," said the professor to Perry, when Quinward's figure had disappeared along the sun-lit road. "We'll be going soon."

The boy shook himself into reality.

"What time do we start?" he asked.

"At ten-thirty," was the reply, "so that you can get a bite of breakfast and forty winks, at least."

The scientist had little sympathy with what he considered the lad's foolishness in staying up all night with Quinward, but he knew that nothing would be gained by saying so, and, besides, he realized that this persistence on the lad's part was a sign of character. To Perry, the whole night had been too wonderful even to talk about, and he tumbled into a sleep so profound that when his uncle wakened him, an hour and a half later, it took the lad a minute or two to decide whether he was in old Egypt or in the new.

Rubbing his eyes, and yawning, for he was still fearfully tired, as much from the reaction as the fatigue, he walked over to the window, to look out over the Pyramids. There, immediately in front of the hotel, was a caravan of fourteen camels, and among the drivers, directing operations, was Arnold Wyr.

"Oh!" cried Perry, "is that our caravan?"

His uncle nodded.

"Say!" ejaculated Perry, and splashed cold water on his face, "we're really off!"

"Just waiting for you," the leader of the expedition responded. "I gave you the chance to sleep right to the very last minute."

The rest of Perry's dressing operations resembled a motion picture film run at full speed, and in little more than a minute he was in full kit and a-tiptoe with eagerness to be away. He took the stairs two at a stride, far too excited to wait for the elevator, much to the amusement of the residents of the hotel, enervated by the Egyptian climate.

"Oh, Mr. Wyr," he cried, as he dashed out, "which is my camel?"

The Englishman turned to the head camel driver.

"Which is the wickedest, Michawi?" he said in English, for the boy's benefit, and then translated into Arabic.

Michawi smiled, showing his strong white teeth, and said, in his broken English:

"The camel with a hurt on his neck, he is a bad one. He fights."

He pointed to one of the camels which had a small wound on the side of his neck.

Perry would not have backed down for the world, but he had not bargained for this.

"All right, I'm game," he answered.

His uncle laughed.

"Never mind, Perry," he said, "that happens to be Mr. Wyr's own beast. We'll give you something easier for a beginning. This is yours here."

"Do I get on him now?"

"I only hope you won't be more anxious to get off than you are to get on," was the answer. "Yes, you can mount now, if you're ready."

"I'm ready," the boy responded, and, as directed, clambered into the saddle, putting his feet on the cross-bar, and awaited the word to proceed. Michawi gave a shout, and the boy felt the great hump sway beneath him, giving him a queer feeling of insecurity.

"Look out as he gets up!" warned his uncle.

Not knowing what to expect, Perry curled his toes under the cross-bar, getting a grip as though a camel were a bucking horse. This was nearly his downfall, for Perry did not know that a camel rises on his hind-legs first. As the beast rose, it pitched the saddle at such an angle that the lad felt sure he was about to be thrown over the animal's back. He had just time to uncurl his legs and put a foot on the cross-step to brace himself, when, after a distinct pause, the camel gave a muscular jerk and came up on its fore-legs also, and the boy settled back into his seat. The beast stood still for a moment, and then began to move.

"Is—is this camel double-jointed, Uncle George?" asked Perry, the words being jolted out of his mouth, as he ranged up beside the professor, who meanwhile had mounted his animal nonchalantly

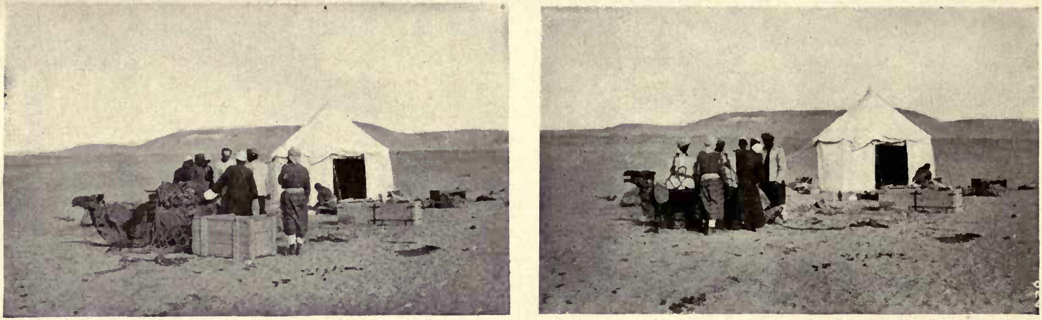
"I don't suppose so," was the answer. "Why?"

"The way he walks," replied the boy. "It feels as though his nigh and his off sides had become unhitched, somehow."

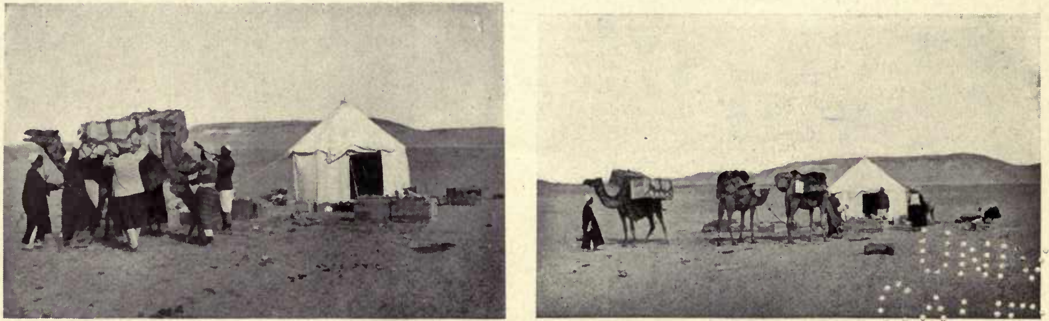
The leader of the expedition laughed at the description, although realizing that it did give an idea of the loose, racking gait of the camel.

"They all walk like that," he said. "You get used to it, after a time."

"It's sure queer," said Perry, "but it's rather fun."



WAITING FOR THE LOAD. ROARING AT THE WEIGHT.



RISING, STILL PROTESTING. READY FOR DESERT MARCH.

Courtesy of American Museum of Natural History.

A CAMEL BEING LOADED WITH HALF-TON FOSSIL CASES.

" Tell me, after the halt, if you think it's as much fun," the scientist warned him.

For the next half-hour the lad was silent, watching the caravan tune up to start. At last the long line was ready, Michawi took the lead, the soft-padded feet of the camel shuffled on the beaten road to the south, along the western bank of the Nile, and the trip toward the desert was begun.

In single file, there was little chance for speech, and Perry's desire for questioning grew gradually less as the camel swung into that long, slouching walk, which at the never-changing pace of two and a half miles an hour, eats up the desert miles. So absolutely regular is this pace that distances on the desert are measured by caravan hours, and the average day's journey is six caravan hours or fifteen miles. Racing camels, however, which are an Arabian breed, specially bred for speed, have been known to carry a traveler as much as a hundred miles a day, but these are seldom used in caravans.

Perry had not been in the camel-saddle more than about half-an-hour before he began to feel as though he were sea-sick. He choked down the feeling, but it made him miserable and unhappy. His back, too, was beginning to hurt from the motion, and when, after what seemed an age, the caravan halted for lunch, it was a stiff and weary lad who stepped off gladly from his camel when the beast knelt down.

" How are you feeling? " asked his uncle.

" I'm stiff," confessed the boy; " that sideways wiggle seems to catch me in the small of the back."

" It catches me, too," the professor said, comfortingly, " and almost every one else in just the same way."

" Doesn't one ever get used to it? "

" The Arabs do, and people who travel in a camel-saddle a great deal. But one caravan trip won't toughen you, my boy, and you needn't expect it. Camels are not ideal beasts for riding, but they are so highly specialized for desert work that nothing can take their place."

" I should think," said Perry thoughtfully, " they could be useful on the alkali plains of our Southwest."

" Especially since camels originated there," said the professor.

" Camels did? In America? You're joking, Uncle George! "

" Certainly they did. The camel is an American citizen." The scientist smiled. " If coming over in the *Mayflower* gives the right to be considered one of the old American families, how about the camel? We've found his ancestors in the Uinta formation in Utah. What period is the Uinta, Perry?"

"Upper Eocene," the boy answered promptly.

"Right," the professor answered. "And about how long ago?"

"Two million years, according to that scale you gave me on shipboard."

"Well, about two million years ago, there were four different families of camelids in America which were destined to develop. The earliest of them seems to have been a small creature called Protylopus, about a foot high."

"Weren't there any of them in Africa or Asia?"

"None have been found. No, so far as we know, the camel family is pure American. All through the Eocene they remained quite tiny creatures, no bigger than a cat. They grew a little larger during the next period, the Oligocene, becoming about the size of a sheep-dog, but of course they were much more slenderly built. It was in the age after that, however, Perry, that the ancestors of the camels spread all over America. During the first part of the Miocene, vast herds of long-necked camels, known as Alticamelus, or the giraffe-camel, roamed over the western plains, and their bones are found by thousands in the Miocene deposits of Colorado."

"Why giraffe-camels, Uncle George?" asked Perry. "A camel hasn't anything to do with a giraffe, has it?"

"Not a thing," was the reply, "although the giraffe's scientific name, Camelopardalis, seems to give color to the idea. No, Perry, in certain ways a giraffe is an intermediate between a deer and an antelope. Don't forget that a giraffe always has horns, although they are only small bony growths which correspond to the bony core of a deer's horns, and the giraffe's male ancestors had long horns, as in deer. But the giraffe-camel of the American Miocene was just plain camel, or rather, he was on the road to cameldom. He was called a giraffe-camel because he had a long thin neck like a giraffe. He carried it straight, too, so far as we can determine, not in that bended loop effect of the modern camel."

"What happened to them?"

"One branch turned into the llamas, which are now the beasts of burden in the Andes, and which were used by the Incas of Peru for the same purposes that we use horses. The llamas used to be in Colorado, too, and we have found their bones, fossilized. The other branch of the camelids crossed by the Behring Sea bridge, and developed into the modern camel in Asia, naturally reaching Africa in the latter part of that period before the coming of the European Ice Age."

"But what happened to our American giraffe-camels?"

"They died out. In the late Pliocene Period they were all gone from the East and only browsed on the vegetation of California and the plateaus of the Southwest. Then the cold of the Ice Age struck North America and the North Pole ice covered half the United States. The giraffe-camels were not rugged enough for this, and as but one baby camel was born a year, they could not live.

"The llamas had found their way to South America, over which the ice-sheet did not creep; the true camels had found their way to tropical Asia and Africa. These species survived those thousands of years of terrible cold by hugging the equator and so passed on into modern life, hardy and secure, while their North American ancestors, the giraffe-camels, failed in the Battle of Life. So, you see, Perry, although we always think of the camel as a foreign animal, he really is an emigrant from our own United States."

"We ought to get him back, then," said Perry. "Why couldn't we?"

"It was tried," replied the professor, "during the California gold-rush of '49. Some camels were imported for the purpose of carrying supplies to the army posts in the arid regions, but for some reason or other, they never flourished. I suppose the herd was not large enough to keep the animals from inbreeding. So the camels were turned loose."

"Are there any still left?"

"I doubt if there are any, now. Once in a long while, there is a report of a camel having been seen in Arizona. But the Indians killed most of them during the first twenty years after they were set free, and mountain lions disposed of the remainder. After all, Perry, a camel is an inoffensive ruminant, depending only on his speed for escape from any powerful carnivore. He is protected in the desert, for no heavy creature, such as tigers, live there, and hyenas and jackals eat dead flesh. But a mountain lion would easily kill him in a fight, and a camel would have to come to the wooded country for food and water. I don't think camels will ever be plentiful in America again. The broncho and burro need fear no rival."

"So far as that goes," rejoined Perry, wincing as he rose up at the signal that the caravan was about to move on again, "I'd sooner try to sit the worst bucking horse that ever was foaled than have my back twisted like a double-back-action corkscrew by this queer-jointed beast."

Past thirteen pyramids the caravan trod, following the ancient road beside the Nile, sometimes on the summit, looking over the broad cultivated region where the Nile had overflowed and left its deposit of fertilizing mud; at other times over the edges of the cotton fields themselves, always at that one unswerving rate of two and a half miles an hour.

Perry sat frontwards, then sideways, then put his whole weight on the cross-piece, then wriggled around to some other pose. But it made very little difference. No matter what position he assumed, that corkscrew-like racking walk from side to side nipped the base of his spine. Toward the end of the day, he got off and walked. His uncle did the same, but the Englishman, who had spent months at a time in a camel-saddle, seemed quite content. The road was firm at this place, lying in the valley of the Nile at the base of the sandstone terraces, peppered with graves, where for six thousand years Egypt has buried her dead, high above possible flooding from the waters of the Nile. The sandstone was laid down when the southern part of Africa was an island and all the Sahara desert was the bed of a great sea.

After five caravan hours of travel, the long line of camels halted near Sakkara, not far from the ancient step-pyramid. Though the day was still young, Perry was stiff and sore from riding, and tired from missing his sleep the night before. None the less, under Antoine's suggestion, he walked two miles to the ruins of the ancient city of Memphis, the capital of Egypt in the dawn of history. Wonderful and impressive as were the old temple of Ptah and the colossi, it was with readiness that Perry turned his steps homewards to the caravan, and when he reached his tent he fell asleep without even realizing the fact that this was his first night on a caravan halt.

It was almost a different lad, however, who jumped up briskly when the call to wake the camp was made at sunrise. He was out and busy with his camera half an hour before breakfast was ready, and when he sat down, his appetite whetted by the open air, he tucked away a meal that made a serious inroad on the provisions.

"You'll have to go easier on the grub than that when we get out on the desert," his uncle warned him jokingly, "or we'll have to build a railroad as we go to keep you in supplies."

Perry grinned appreciatively.

"I wish I could eat enough at one sitting to make me so fat that I wouldn't feel the camel," he said, "but as I can't, I suppose I'd better quit now." He winced as he got up from his cross-legged position on the floor. "I just feel like one big bruise."

"Cheer up," said Antoine, "you'll feel worse to-night."

The caravan started past Sakkara, following the same general character of road as the day before. To the left, lay the Nile, flowing between the cultivated fields, and beyond, the high, bare, rocky escarpment of the eastern plain; to the right, frowned the sandstone bluffs, from the top of which to the westward stretched the interminable leagues of desert.

"That's really the plan of all Egypt, isn't it, Antoine?" asked Perry, at the evening halt, pointing across the cultivated stretch. "Desert on either side, and that two-mile strip between. I hadn't ever thought of Egypt merely as a single narrow strip of land, at least, not as narrow as that."

"That is just what it is," Antoine replied. "Except for the delta and Lower Egypt, for the Fayum, where we are going, and for the oases in the desert, that narrow valley is all. Yet Egypt has played a great part in the world."

"I don't see that it does now," declared Perry, with American opportunism. "It's all tombs. We've seen the tombs of Ptah-hotep, Ti, Mera, and a whole lot of others to-day and yesterday. Those chaps seem to have done big things. They sent out armies all over the map. They built huge temples and pyramids. I don't see that modern Egypt is doing anything at all. What's the matter?"

"Nations die out, like people," said Antoine. "There is no longer any Egypt. It is England, and England only, that lives in the present, here. Yet, Perry, you must not forget that the great dam at Assouan, which was built less than ten years ago, is a much bigger work than the Pyramids and a million times more useful. Egypt now grows two crops instead of one, doubling the wealth of the entire country."

"Good," said Perry emphatically; "that's worth while. But, Antoine, why don't the English modernize the entire business? Look at that chap over there, raising water with a shadouf. Instead of swinging that pole and that weight, just to bring up a small bucket full of water, he could put in a force-pump and get as much water in ten minutes as he can get now in half a day."

"Perhaps," said his friend. "But what would he do the rest of the day? Sleep in the shade? To save his time would only increase his idleness."

"I don't wonder that he sleeps," said Perry, stretching himself. "I notice I want to sleep just as soon as the caravan stops."

"That's the strong sunlight on your eyes," declared Antoine. "You'd better turn in now."

"I guess I will," the boy replied, and in a few minutes he had curled up on the rugs within his tent, looked up sleepily at the Arabic quotations from the Koran sewn in colored strips to the inside of the canvas walls, and, rightly judging these to be piously designed to bless his slumbers, he blinked twice and fell asleep.

The next day was very similar to the two that had preceded it. Another short day of five caravan hours brought them past the pyramids of Dashur to the excavations at Lisht where there was a large party at work securing old vases and objects of art for the Metropolitan Museum of Art, New York.

There, next morning, with the old crumbling pyramid of Usertesen I in the distance, a half an hour was spent in securing a series of photographs of the entire caravan and then the party turned its face to the west and struck out across the desert. Loaded with heavy fantasses or steel tanks of water, the baggage camels brought up the rear, the line, strung out in the customary single file, reaching an eighth of a mile in length.

Now, Perry thought, for the great sand waste of the Sahara. He had expected billowing sands, like huge waves, vast hillocks and dunes. Yet he saw nothing of the sort. The ground over which they were traveling was not sand-color at all, but like a mosaic of brown and black, level and hard. The whole surface of this part of the desert was paved with small pebbles, quartzites, the boy afterwards found them to be, weather-worn and absolutely sunburnt by the terrific and pitiless blaze of the desert sun. It was very different footing from the level beaten road beside the Nile, which they had traveled for the past couple of days, but that seemed to make no difference to his camel, for it swung along at the same even two-and-a-half-mile-an-hour pace, as disregardful of the pebbles as it was of the twinges of pain that its every motion caused the boy.

The noon halt was made clear out on the desert, without a tree in sight. To the westward stretched the blackened and pebbly waste, far as the eye could see, to the east could be seen the outlines of the Lisht pyramids, small, but clear against the sky, and Perry knew that below them lay the valley of the Nile. The meal, of which dates formed a principal part, was washed down with tepid water from one of the fantasses, and already the boy found himself aching for a good glass of iced water in the American fashion. Ice-cream would have seemed like a fairy wish, and, indeed, it would take a fairy godmother or a genie from the Arabian Nights to materialize ice-cream on the Libyan Desert.

Suddenly Perry turned to his friend.

"Antoine," he said, "what's the idea of camping here?"

His friend sleepily turned over on one elbow.

"Why shouldn't we camp here?"

"I should have thought," Perry retorted, "that it would be better to camp near water."

"Yes, yes, but we are near water. Tamia is only ten miles away."

"There's water not half a mile away," declared the boy. "What's the use of fooling that way?"

"How do you know there is?" queried Antoine, still failing to betray any real interest.

"I can see it!"

"How far away?"

"Less than half a mile, I should say."

"Mr. Wyr," called Antoine, "how far away is that village that the lad sees?"

"To the southwest, you mean?"

"Yes."

"About forty miles, you know. That's in the Fayum."

"What?"

"Yes, yes, Perry, that is a mirage. You don't see the village at all, you only see the reflection in the sky."

There was an instant's pause, and then the boy said slowly:

"Well, I can see, now, how any one would get lost on the desert in a hurry. I'd have started off to walk to that village without even stopping to think."

"There are a jolly lot of skeletons of people who have done that, and the jackals have picked them clean," the survey man replied. "Take my tip, Perry, and don't start for any oasis that you don't see clearly marked on a map. I've been puzzled many a time by seeing to my right or left a village that I knew by compass to be straight ahead. So, I think, instead of trying to reach that village you see there in the sky, we'll keep straight on and be content with reaching Tamia to-night."

The afternoon march was a long one, five caravan hours, and when at last the camels reached the village which is the last source of water for the Libyan desert, Perry's back felt as if it were a jig-saw puzzle that had been wrongly pieced together.

So much had been said about Tamia as a base of supplies, the expedition had manifestly counted so much for its success on the utilization of its resources, that Perry had expected it to be quite a sizable town. Instead of that, he found Tamia to be a settlement of low flat-roofed mud-brick houses, situated on the edge of a green plain, dotted with palm-trees, while on the other side it faced the desert.

It was late when the caravan halted, but no sooner had it come to a standstill and the tents pitched than it became the center of a vast amount of attention. Perry had disposed of a very satisfactory supper and was busily engaged in trying to find some particularly soft part of a rug to sit on, when, with a great deal of pomp and ceremony, an old Arab rode up, with ten attendants, and paid his respects to the party with much palaver.

"Who was that, Mr. Wyr?" asked the lad, when the camp had settled down.

"That's Sheikh Harun Talasun," the survey expert answered; "he's one of the really big men of the village."

"What was wrong? Are we going to be held up?"

"Not a bit of it. No, he just came to welcome us and to say he was sending a fat sheep as a present, for a feast."

"We'd think it queer," put in the professor, "if the mayor of one of our western cities should send a fat sheep for a feast because some 'bonediggers ' or bug-hunters happened to come in his neighborhood, wouldn't we, Antoine? "

" It would seem strange," the Belgian agreed. " But it is common here."

" Don't you suppose it's all a bluff," queried Perry, " one of these ' everything of mine is yours ' sort of businesses?"

" I don't think so," was the reply, " but the morning will show."

Next morning, sure enough, the Sheikh returned with a donkey, led by a slave, and bearing on its back a fine fat sheep. Suitable greetings were exchanged and, a couple of hours after sunrise, the caravan was off. Tamia was left behind, the last point of civilization was broken with, and during the rest of the stay in the desert only a constantly moving line of camels could keep the expedition in water and supplies.

" It's like the commissariat of an army," said Perry, when he realized this; " if our line of communication was cut, we'd be starved out."

" Yes, yes," Antoine agreed, " it is a serious matter to be out of reach of water, but we can depend on Mr. Wyr; he knows all that is necessary to do in Egypt."

The march out from Tamia was over very different country than the road over the small stretch of the Libyan desert passed on the westward march from Lisht the day before. It was low and shingly, with little scattered tufts of vegetation; and seemed to be part of a huge saucer-like depression.

"Is this the Fayum?" asked Perry.

"This is the very site of Lake Moeris," the professor answered, "an artificial lake made by Amenemhat III. It used to be quite a famous resort in Greco-Roman times, Perry, and almost anywhere around you might find Roman coins if the Roman boys used to play pitch-and-toss, as Juvenal and some of their writers say the urchins did."

"Right here?"

"Right on this very spot."

"But where has the lake gone?"

"Dried up," was the answer. "A great deal more land is irrigated in the Fayum than used to be the case, so that the water from the old canal of Joseph, the Bahr Yusuf, has more work and less overflow. That canal, by the way, Perry, was made so long ago that even tradition has forgotten about it, and it was supposed to be a natural river until recently."

"Who do you suppose made it, Uncle George, was it Joseph?"

"It must be much older than the Joseph you mean, the Joseph of the Bible," his uncle replied. "It may be almost as old as the Pyramids. Lake Moeris has shrunk to that lake you see in the distance, the Birket-el-Qurun. We're going to camp on the other side of it to-night."

"But I thought there was no water in the desert!" cried Perry, feeling in some way that the trip would not have to be as heroic in endurance as he expected.

"You're welcome to all of that water you can drink," was the reply. "Even a thirsty camel won't drink it, not on the northern side, at least. And what a thirsty camel won't drink must be mighty bad water, you can make quite sure of that."

"Does anything drink it?"

"Some of the wild life of the desert comes down," was the reply. "I've seen gazelle, quite often, the little Dorcas Gazelle, especially. That's a tiny beast, Perry, not more than three feet high and usually even smaller."

"With horns?"

"Pretty lyre-shaped horns a foot long. You often see them around the western end of Birket-el-Qurun, and occasionally at this end.

"I'd like a head for a trophy!"

"Can you reach your rifle easily? If you can, there's no reason why you shouldn't get a gazelle if you have a chance. I'm not much of a believer in mere shooting for the sake of shooting, but I don't go to extremes, and a gazelle more or less won't make much difference to the desert fauna. There is such a thing as sport. What I hate is the kind of so-called sportsman who takes a delight in seeing how many he can 'bag.'"

"I can get at my rifle in a second, Uncle George," said the boy eagerly, "but we're not going near the shore of the lake, are we?"

"Not so very close," the professor replied. "The road keeps well to the east.

"Could Antoine and I break away from the trail, on the chance of getting a shot?"

"I'll see," his uncle replied, and called Michawi. With Wyr as interpreter a few minutes of animated conversation occurred and then the scientist said:

"Very well, Perry, as long as you promise not to go along the shore to the south at all, I don't see that you can get lost. We'll be on the ledge above, and probably can see you, any way."

"Bully!" cried the lad, and went to get his gun.

Branching away from the main caravan, Perry and Antoine turned their camels' heads away from the upward slope out of the valley of the Fayum and turned westwards towards the lake. They scared up a large pale-colored Egyptian hare, but with his uncle's warning against unnecessary slaughter, the lad did not shoot it. He asked just one question:

"I suppose we have a specimen of that rabbit in the museum, Antoine, haven't we?"

"Oh, yes, yes, quite common," said the other, and the hare was allowed to jump away unmolested. A little desert fox, or fennec, which had been lurking near by, evidently with designs upon the hare, also was frightened by the approach of the camels and darted away in a different direction. But Perry was after gazelle and nothing else would serve.

At last, towards the end of the afternoon, when already they had reached the reedy edge of the Birket-el-Qurun, Perry heard a low whistle from Antoine, and saw a small object streaking like the wind along the shore. He jumped off the camel, without waiting for it to kneel, nearly falling on his nose as he did so, and though the gazelle was going so fast that it seemed foolish to try, raised the rifle to his shoulder and fired.

"By jiminy, I hit him," cried the lad, as he saw the little creature roll over and over in the sand.

He ran up to it. The shot had been well placed and the gazelle had died without pain and without a struggle.

"Yes, yes, good shooting," said Antoine, as he came up. "Good horns, too."

There was regret as well as triumph in the boy's glance as he looked down at the graceful, slender creature, which a moment before had been full of life. But he was no sentimentalist and recognized the difference between shooting for a definite purpose and wanton slaughter.

Short though the digression had been, it had led Antoine and Perry a little distance from their course, and had taken up time. Perry's camel, too, had gone on walking without his rider and had to be overtaken and turned. The ground skirting the edge of the lake, was rougher, and the sun was sinking toward the horizon.

"We'd better hurry," said Antoine, after he had helped Perry to secure the little gazelle on the camel saddle beside him, " I don't know this country well enough to travel in the dark."

" But it doesn't really get dark," said the boy, remembering his night before the Sphinx with the artist, " one could almost read by the stars here, they're so bright."

" You think so," was the other's reply. " But I've tried finding desert trails before. How about it, Perry; are you feeling all right? "

" Fine," answered the boy, " if my back didn't hurt so. You know, Antoine, when I fired, the kick of the rifle made me think I'd got the bullet in my own spine, it gave such a jolt."

" You've only got one more day's riding," his friend assured him, as he walked over to his kneeling camel, " and on the way home you'll be toughened up a bit."

Passing from the northern border of the lake, the camels started to climb. Then it was that Perry realized that no matter how good a camel may be on sandy level, or for that matter on undulating sand dunes, a really sharp slope, such as the first hundred foot pitch from the lake level up to a ledge on which stood the ruins of an old temple was more than his beast could manage.

Following Antoine's example, he slipped out of his seat, none too sorry to get a change, and, taking the camel's rope, led the animal up the slope. It took an hour's scrambling, and Perry was almost breathless when they reached the first of the ledges.

"Stiffish pull," he remarked, as Antoine halted beside him.

"Yes, yes," the other answered. "But I think that one is the worst."

The light was falling in long slanting shadows over the ledge and Perry, kicking idly at a white object in the sand with his feet, saw that it was a bone. More in curiosity than with any other idea, he scooped the sand from around the bone with his foot.

"Some poor camel foundered after the climb—" he began, then stopped suddenly.

"Antoine," he said, with a curious note in his voice, "hasn't a camel got sharp teeth on the lower jaw?"

"You would think they were sharp if they nipped you," was the answer. "Why?"

For answer Perry dropped down on the sand and began scooping away the sand from around the bone he had uncovered as if he were a terrier digging for a rat. Antoine watched him with growing interest.

"What have you got there?" he queried.

"I don't know," replied the boy, stuttering in excitement, "it looks like the skull of a seal!"

"Whatever it is, I'm ready to wager that it isn't a seal," said Antoine, but hurrying over, none the less. "If you thought for a minute, Perry, you'd see that it couldn't be a seal. It's more likely—"

He had reached the lad and looked down. He gave a long, low whistle.

"Let's get it out!" cried the boy and reached down to grab the bones.

His hands were just closing on them when Antoine's grip caught him by the shoulder and hurled him backwards.

"What the—" began the boy.

But Antoine paid no heed. His head was down in the hole that the boy had made, and he was blowing the sand away with his breath as though the bone were made of feathers. Then he looked up.

"I think it's an Eosiren," he said. "If it is, Perry, it's a bully find."

"Let's take it to camp!"

"How?" queried the other. "Pick it up the way you were going to?"

"Why not?"

"You haven't learned the first thing about fossil-collecting yet," the other replied. "In the first place, before a bone is moved, it must be studied just in the position in which it lies. Quite often the position of the bones may be of tremendous help in restoration. For example, Perry, the legs of the great fossil swimming bird Hesperornis were supposed for years to be attached to the skeleton in a way that we now know to have been entirely different. And, for another thing, you can't tell just how fragile fossilized bones may be. You might smash them all to pieces, just by picking them up the way you started to do."

"That's why you collared me," exclaimed Perry, "I was wondering."

"Of course. Now hurry, Perry, and gather a lot of stones. We've got to make a heap so that we can easily find the place again, and get Dr. Hunt to come down to-morrow. I'll take the bearings."

Pulling from his pocket a note-book and pencil, Antoine noted with extreme care the exact bearing of as many different points as he could. Meantime Perry, first alone, and afterwards with Antoine's aid, built up a small heap of pebbles, on the top of which they spread a white handkerchief, weighting this down by a stone at each corner. It was nearly dark when they were finished, and Perry clambered back into his camel-saddle eagerly.

Along the ledge they traveled, not knowing just where the rest of the caravan might be, and, as time went on, Antoine began to look a little troubled.

"How do you hurry up a camel?" Perry shouted to his companion.

"You don't," was the reply. "A camel can't be taught to hurry. He'll walk and carry a load. That's about all."

Perry clucked to his beast, reached over and slapped it on the hump, and did everything he could to suggest speed. He might as well have tried to influence the desert sand, the camel went walking steadily along, not changing its double-jointed walk by a hair's-breadth.

Just as the sun was disappearing on the edge of the horizon, one of its last rays caught and illumined a spot of color on the ledge just a little above them.

" No chance of getting lost now," called Perry, cheerily, " there's the Stars and Stripes."

CHAPTER VII

FINDING THE ELEPHANT'S GREAT-GRANDFATHER

It was with great excitement and not a little pride that Perry came racking up to the camp. He held up the Dorcas gazelle as he approached, and even in the dusk the slender horns could be seen. As soon as he drew near, moreover, he shouted,

"Uncle George, I've got an Eosiren!"

"That's a gazelle, not an Eosiren," said the professor, smiling. He had been a little anxious and was unfeignedly glad to see the boy safe, and in good spirits.

"I don't mean this," said the boy. "What nonsense, Uncle George! No, but really, I did find one!"

"Did it bite?"

"Please don't tease," protested Perry. "Honest, I did!"

The leader of the expedition looked inquiringly at the boy's companion, as the latter dismounted and came up.

"He's right, I think, Dr. Hunt," responded Antoine, in answer to the look. "I knew we were late and it was getting so dark that I didn't have much chance to examine it, but it looked to me like *Eosiren Andrewsii.*"

"You don't suppose it was Eotherium?" the professor asked, hopefully. "I'm very anxious to take home to the Museum a good Eotherium. What level was it on?"

"On this one, sir," the younger paleontologist answered, "in the estuarine deposit, not in the Birket-el-Qurun level. That was why I thought immediately it must be Eosiren. There's not much chance of finding Eotherium as high as this level, is there?"

"Very little, I should say; almost none," was the reply.

"Is there such an awful lot of difference, Uncle George?" the boy asked. "That is, between this level and the one underneath. I know, of course, the under one is the oldest, but are the fossils so different?"

"Very different, my boy," was the reply. "They would have to be, for almost a million years passed between the deposits of this level and that. The stratum of which Antoine is speaking, just above the level of Birket-el-Qurun, is a marine limestone. This level is estuarine, that is to say, it is a deposit of material brought down by the great river that flowed through this valley millions of years ago, and like most estuarine deposits, the fossils found in this stratum are of the land as well as of the sea.

"You can understand, Perry, that in a true marine or sea deposit you wouldn't find land animals. It would be as foolish to look for land animals in a marine deposit as it would be to go dredging in the middle of the North Atlantic now for the bones of a modern rhinoceros, or to scour the surface of the western prairies in the hope of finding a modern whale left high and dry."

"So mine isn't one of the oldest," said Perry, disappointed. "I'd been hoping I'd found something that nobody had ever seen before."

"You're greedy," his uncle said, smiling; "many an old fossil-hunter has worked for years before finding a specimen of a species new to science, and yet you expect to kick one up on the very first day."

"I don't know that I really expected to, Uncle George," the lad replied, "but I would like to collar a new one sometime."

"You probably will, and meantime, in the morning we'll hustle over to the place of your discovery and find out what it is that you've really got."

"I hope it's the one you want—the Eotherium!"

"If you found the bones on this level, it's not," rejoined the leader, "you can make your mind easy about that. A dead Eotherium wouldn't work its bones up through a hundred feet of rock. But if you want to go with us in the morning to help prepare this specimen of yours, you'd better make a bee-line for your pillow now, for there's a long day's travel to-morrow and I won't delay the start of the caravan for a dozen Eosirens. Sunrise for you, Perry, if you want to come."

"All right," the boy replied, and being tired and backsore from the camel-riding, he started off for the sleeping-tent and was soon fast asleep.

He had no difficulty in waking. The sense of expectancy brought him out of the tent even before the rim of the sun was above the horizon, and the dawn brought vividly back to him the vigil he had spent before the Sphinx. Early as he was, he was no more prompt than his uncle and Antoine, and in a few minutes the party was off, followed by a couple of laborers with shovels and one fellow carrying plaster-of-paris, canvas, and glue.

The white handkerchief, spread out on the little cairn of stones, made a conspicuous object, and no time was lost in reaching it. To the trained eye of the professor, the tangled heap of bones contained no mystery. He gave them just one glance.

" You're right, Antoine," was all he said, " it's *Eosiren Andrewsii.*"

Under the scientist's expert directions, the laborers were set at work. Almost every movement of the shovels was watched with closest attention, and Perry was surprised at the extreme care that was taken. At last the bones were fully uncovered and Antoine made a detailed drawing of the exact position in which they lay.

" How could you tell at once that it was a certain species of Eosiren, Uncle George? " asked Perry, while Antoine was busy with his sketch-block.

" One gets accustomed to fossils, my boy," was the reply, " and can tell a great many of them almost at sight. Then, Perry, any time that you want to try and determine for yourself what fossil bones may be, remember that there are only a certain number of animals which they can possibly be. You know from the stratum, for example, that the bones are not likely to be those of a creature which developed in later times, nor of one belonging to an earlier stage of development. You'll see just what I mean if I say that you couldn't find a Pteranodon in this stratum because all the Pteranodons were dead before this layer of rocks was laid down.

"But I thought Sirens were sea-cows, things like the manatee and dugong," protested the boy.

"They are," said the scientist, "what about it?"

"This beast has got four legs."

The professor nodded approvingly at his nephew.

"Very good, Perry," he said, "I'm glad to see that you tell bones so clearly. The Eosiren did have hind legs. Both the manatee of Florida and the dugong of the Red Sea have lost their hind legs. The Halitherium of the Oligocene Period had only a rudimentary hind leg, so that you can see how far back in the history of Sirenian development this Eosiren comes. But what makes him especially interesting to us on this trip, Perry, is that he's distantly related to the ancestor of the elephant, and, as you know, we're hot on the trail of elephants."

"I don't see how a sea-cow can be on the road to the elephants," ejaculated Perry in suprise. "It looks a heap more like a seal."

"Looks don't count for a great deal in paleontology, my boy," warned the scientist. He turned to Antoine, who was putting up his pencils. "Have you finished?"

"Yes, sir," answered the younger man, showing his sketch to the leader of the expedition, who scanned it closely.

"H'm, yes," he said, "that's about it. Now we'd better get up the bones."

The fragility of the Eosiren skeleton made this a more difficult task than Perry had expected, and he inwardly blessed Antoine a dozen times that his friend had kept him from trying to pull the bones out of the sand by main force. First, by carefully hardening them with glue, and then by wrapping them with canvas and plaster-of-paris bandages, finally all the bones were got ready for removal, and, for the time was wearing on, the party hurried back to the camp, snatched a hasty breakfast and gave word for the caravan to start.

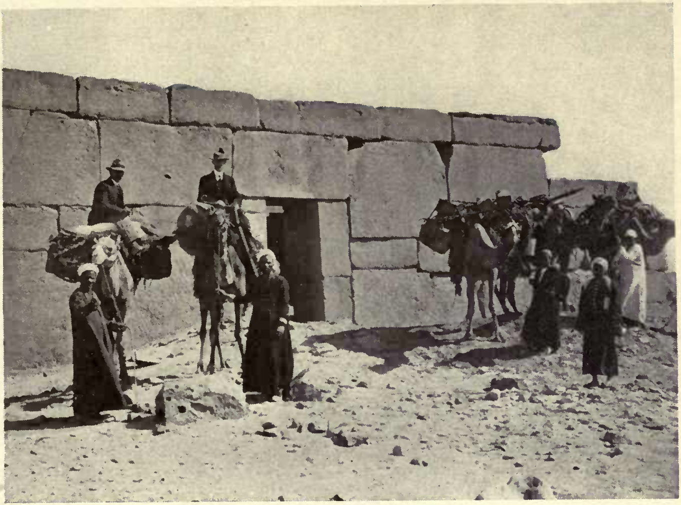
As they moved away, Perry and his uncle turned for a last look over the level which had given the boy his first paleontological prize, and the scientist drew his nephew's attention to the ruined temple of Qasr-el-Sagha, visible in the distance.

" That's an easy place to remember," said the scientist, and plunged into the history of the temple when it stood on the very banks of Lake Moeris and was the center of a busy Roman colony, " easy to remember because it has given its name to the giant coney of Eocene times. If you did a little digging here, you would find many of his bones. Think a minute and see if you can't guess the name."

" ' Therium ' means beast," said Perry, meditatively, " and the name of the temple is Qasr-el-Sagha. Oh, I know! " he said, eagerly, " the Saghatherium! We've got him at home in the Museum."

" Exactly," said his uncle. " Now you know where he comes from."

" I never thought Saghatherium was just a coney," said the boy. " I saw a coney in the Zoo at Cairo, when you were arranging about this trip. He was a fierce little chap, but nothing like as large as our fossil at home."



Courtesy of American Museum of Natural History.

At the Temple of Qasr-el-Sagha.
Museum Expedition in Egypt, starting out for camp, two days' camel journey from water.

Courtesy of American Museum of Natural History.

Across the Libyan Desert.
The Museum party on the sunburned stony plain. Note four pyramids in distance, at extreme right.

"He isn't as large," was the reply. "The Saghatherium was bigger, and he was a fighter, too. Herds of them ran over this plain in Eocene times, and with their fighting tusks, a pack of them would have been an ugly foe to meet. Do you remember the tusks, Perry?"

"I think I do," answered the lad truthfully, "but I'm not quite sure. I didn't pay much heed to them, when I was in the Museum. But I will when I get back, you bet."

"You needn't go to the Zoo to see a coney," said the professor, squinting in the bright sunlight. "If I'm not mistaken, there's one off there amid the rocks. See him?" and he pointed to a crevice.

Perry shaded his eyes with his hand.

"Oh, yes," he said, "I spot him. He's hard to see, though, against the rock. Looks a little like a rabbit."

"And yet he's more nearly related to an elephant than a rabbit," the professor commented. "As I was telling you, Perry, looks don't count for a great deal."

Conversation dropped as the ascent became stiffer. The caravan was going up the steep ravines which form the only way between the level on which the ruined temple stands and the next bench, atop of the great cliff rising four hundred feet above them. One of the baggage camels, which had a pair of weak hind-legs, refused at first to try to make the climb and had to be pushed from behind by all the drivers together, while its bubbling roar filled the ravine with hideous noise. The steep slopes also put a strain on the loads and many of them came off.

" Seems to me these camel-drivers ought to learn to throw the diamond hitch," suggested Perry, as the second load fell to the ground.

His uncle looked at him quizzically.

" Did you ever throw one? " he asked.

" Never," the lad replied.

" I thought not," commented the leader of the expedition, " or you wouldn't talk so glibly about doing it over a camel's wobbly hump. You've got to have something solid, like a mule's ribs, if you want to tighten cinches to that extent."

" I suppose the Arabs know best, at that," the boy admitted. " After all, these Egyptian chaps have been loading camels for a good many thousand years."

" Exactly. And besides, Perry, this climb is unusual traveling for camels. They're accustomed to the level or to the slopes of sand dunes. Except for the Egyptian Survey, which discovered this bone deposit a few years ago, probably no one has taken the trouble to climb this cliff since the days that Lake Moeris occupied a large part of the valley below."

On the next tier above, Perry suddenly found a vast change in the character of the rock and saw thousands of beautiful sea-shells in the solid limestone scattered on every side.

Off his camel he jumped again, and filled his pockets with bits of stone containing the shells. They were heavy to carry in the intense heat, when every extra ounce counted, but he simply could not pass them by.

"This must have been the bed of the sea for a long time," said the lad to Antoine, "this limestone deposit is so thick."

"Yes, yes," his friend answered. "The Mediterranean came down south of this. Of course, the shore has changed many times."

"What has built up all the north coast of Africa," queried Perry, "just the rising of the land?"

"Partly; but a great deal of it was caused by the discharge of the mud of rivers and streams, making new land, in the same way that the Mississippi is making new land in the Gulf of Mexico. But you see, Perry, as fast as the new land was made, the continent sank, so that the filling and sinking went ahead at about the same rate. Sometimes the sea won out, and we find a layer that is marine; sometimes the land won out, and the layer is a river or fresh-water deposit. When we start to dig out fossils, you'll probably find land and sea creatures close together. That's because when it was a shallow sea, the marine creatures died and their bones sank to the bottom, and when it was marsh, the land animals died in the swamp and the bones became covered with mud. Then the sea took the upper hand again, as the continent sank."

"It's beginning to look as though we were getting into the time when the land was ahead," remarked Perry, examining the soil.

"Yes, yes," said Antoine, "you are right. And see!"

He pointed to the face of the escarpment, up which they were toilsomely climbing.

"Fossil trees!" cried Perry.

"Yes, yes. All petrified. All these trees floated down that river millions of years ago.

There were floods. There will be animals here, too, that were carried down by the floods.'' He pointed to one of the many bones that could be seen. "The crocodiles were here,'' he said, "so the bones are likely to be all separated, the dead animals having been pulled apart when they were eaten. It will not be easy, Perry. There must have been a sand-bar at the mouth of that old river somewhere about here, and when the animals came drifting down with the river gravel and sand, they were stopped and piled up at the sand-bar.''

"Hello—'' interrupted the boy, "what's happening? It isn't sunset yet!''

The whole caravan had halted, as if at the time of Mohammedan prayer, and the men and boys fell on their knees. But, this time, the camels and donkeys crowded in and the lad saw that a few small rain-pools had been discovered. This unexpected supply of water cheered everybody, and it was only a little more than two hours later that the tents of the advance party came into sight. This party, carrying supplies and the heavy tools, had gone from Cairo to Tamia by train and hence had arrived three days earlier.

Late that evening the tents were reached and the permanent camp pitched. It was on the widest of these ledges or tiers of rock, a ledge varying from one to two miles wide and stretching in an almost even line sixty to seventy miles long. The level of the Libyan desert was six hundred feet higher still, a stiff climb.

"I don't know how you feel about it, Antoine," said Perry, confidingly to his friend, as they turned in for the night, "and I wouldn't say so to Uncle George for the world, but I'm sure glad to have a rest from that camel. I was just beginning to think that my backbone never would come straight again."

Antoine smiled sympathetically.

"I think it is the worst animal that man has ever used as a beast on which to ride," he admitted. "I'm stiff, too."

"It's the worst I ever want to ride," rejoined the boy, and yawning, fell asleep.

At sunrise the next day, the work of excavation was begun in earnest. Daoud and the laborers had been eagerly awaiting the arrival of the rest of the party, especially that of Dr. Hunt, who was known as "El Mudir" (the governor) by all the natives. Perry was assigned the duty of supervising the work of the laborers at one of the excavations and he had his hands full, for the

Egyptians were as excitable as children, and at the slightest sign of a bone wanted to pull it out in triumph. They had been working with the Art Museum explorations, and it was difficult to explain to them that while a vase or a statuette was a thing in itself, a bone was of special value chiefly when its relation to other bones was clearly shown. Besides which, Perry had received a good lesson as to the perishability of bones, in connection with the Eosiren and this caused him to be careful.

"Hey!" he shouted suddenly to one of the men, who was walking off with a basket of sand on his shoulder, from the top of which a small piece of bone was protruding, "What are you doing with that?"

The tone, rather than the words, halted the man, and he stopped. But his knowledge of English was not much greater than the few words of Arabic that Perry had picked up in the week he had been in Egypt and matters were at a deadlock when Daoud came along. Perry explained his point and a brief colluquy in Arabic ensued.

"He says some one told him that we were looking for elephant bones, and so he didn't think a little bone like that would be any use."

"Tell him, then, Daoud," said the boy, "that the kind of elephants we're looking for were sometimes as small as cats."

Even Daoud's impassive face could not hide the fact that he thought this a fib—as it was undoubtedly a gross exaggeration, but he translated it as bidden.

Immediately the laborer put down his basket, and taking out the small bone, handed it dramatically to Perry, saying in Arabic:

"Elephant!"

Everybody laughed and the excavation proceeded, but the fellaheen had learned the importance of every bone, no matter how tiny, and several small but important finds were made. The amount of sand to be removed, however, proved greater than Dr. Hunt had anticipated, and it was with great pleasure that the expedition saw the arrival of a party of twelve men from Kuft, coming to ask for work. They had walked the two days' distance into the waterless desert, and it was evident, as soon as they arrived, that they were already regretting the loss of the cooler and more grateful valley of the Nile. Also, they speedily saw that the distance of the camp from the base of supplies might mean scanty rations.

"I'm glad to have those extra men," remarked the professor at dinner that evening.

"Are you?" queried Wyr pointedly.

The scientist looked at him inquiringly.

"Why not?"

"I rather fancy there's trouble ahead," he answered. "They didn't come up in the sort of way those beggars usually do when they're looking for work. They may be all right, you know, but, personally, I thought them a bally discontented-looking lot."

The truth of this guess was apparent less than half an hour later. Daoud, accompanied by the leader of the twelve men from Kuft, came to the tent and asked to see El Mudir. He made a demand of ten piastres (fifty cents) a day, or all the men would quit work immediately. The professor heard them and sent them away without an answer.

"You know I can't pay it," he said to the members of the party, after the natives had gone. "If I do, it'll upset the labor market along the Nile, everywhere, and every government party will have to pay that price forever after. I suppose I can give them a little more than the average, because this work is on the desert and a long way from everything. What do you think, Mr. Wyr?"

"I'll try to handle them, if you like," was the reply.

"Only too glad," said the professor, and the leaders of the natives were sent for.

Perry, of course, could not understand a word, but, knowing the subject under discussion, he was able to follow a good deal of that long conference. It lasted for three hours under the black and starlit sky of Egypt, a battle between capital and labor, out in the naked desert, a day's journey away from water. Inside the tent, reading by the light of one candle, the professor sat, in full view of the native bargainers, immovable. At last the men began to waver, and with a look of satisfaction as he turned to the members of the expedition, but which the contestants did not see, the Egyptian Government expert announced that the laborers had agreed to accept a contract of eight piastres a day, with the promise of a holiday once a fortnight at which there should be given a present of a fat-tailed sheep.

The professor was a man with a great deal of dignity and presence, but this was equaled by the gravity and poise of the leader of the laborers, Ibrahim Salim. When at last the agreement was made, the Arab drew a seal from the inner folds of his robe and signed a contract for his laborer gang with an air that suggested the signing of a treaty to decide the destinies of nations.

With this added number of laborers, the work of excavation went more rapidly, and prizes began to appear. On the tenth day, in the pit which was supervised by the professor, an excellent skull of a young Arsinotherium was found, a curious creature with four horns, two of them huge, and which, as Perry was told, is a puzzle to paleontologists, for it was the lord of its age in Egypt and yet its ancestry is quite unknown. Four days later Antoine had the honor of unearthing the first skull of a paleo-mastodon discovered by the expedition.

It was at the very close of the next day's work that Perry, overseeing the work of the men in the pit to which he had been assigned, saw part of a skull exposed. He called away the workmen to another corner of the pit, for he knew that only two or three minutes of the working day remained. No sooner were they gone than he jumped into the pit himself and began to scoop away the sand with his hands.

Gradually the particles of sand began to fall away, little by little the white gleam of bone became more and more apparent, and a skull, such as the boy had never seen in his life before, seemed to stare through its eyeholes at him out of the reddish sand and gravel that had been the sand bar of that ancient river millions of years before.

What could the strange skull be?

Only the day before, when Antoine had found the paleo-mastodon, Dr. Hunt had said:

"If only we could find a Moeritherium, now!"

Could this be the Moeritherium?

Summoning to his help every scrap of his knowledge, Perry scanned the skull eagerly for something that would seem to remind him of an elephant. If only there had been tusks! But there were only two large cutting teeth. Still, no one yet in the expedition had found a skull like the one before him and his hopes for a Moeritherium would not down.

"Uncle George!" he cried, "can you come here a minute?"

The ring in his voice suggested a discovery, and the professor hurried over. In the evening light he cast a look at the protruding skull and leaped down in the pit to make sure. Then, suddenly, he cried:

"It is a Moeritherium! By the powers, Perry, you're the luck boy of this expedition!"

CHAPTER VIII

THE VALLEY OF FOSSIL WHALES

TRIUMPH beamed from every corner of the boy's face at dinner that evening, as the professor, usually so subdued, fairly gloated with delight over the finding of the Moeritherium skull. Together with the paleo-mastodon skull, discovered only the day before by Antoine, the principal object of the expedition was secured.

"I couldn't tell exactly what beast it was," said Perry, in the course of the conversation, "because I couldn't see that the skull looked anything at all like an elephant's."

"You're right, it doesn't," his uncle agreed.

"I couldn't see how it was an ancestor, then. I don't quite see, even yet. An elephant has tusks and a trunk. This little Moeritherium hasn't either, so far as I can make out."

"That's because the animal is so far back in the line of development," the scientist reminded him. "He isn't in a direct line, but more like a first cousin of what the ancestral elephant must have been, although we haven't found any specimens of him yet. As for the trunk—well, it's true there isn't any sign of that, the eyes are too far forward. But the tusk question is interesting. Do you know, Perry, which are the teeth that the elephant has developed into tusks?"

The boy thought for a moment.

"No, Uncle George, I don't," he said. "Until this minute I never stopped to think that an elephant tusks were teeth."

"What did you think they were? Horns?"

"I—I hadn't ever thought," stammered Perry, confused. "I just thought of them as tusks."

"They are the incisors," the scientist replied. "Now, in Moeritherium, you can see that the second incisors are developed both in the upper and lower jaws."

He held out the skull to the boy.

"Yes," Perry answered, "that's easy enough to see."

"Now in the skull of Paleo-mastodon, as I explained to you fully last night, there were rudimentary first incisor teeth. You remember that?"

"Yes," answered the boy.

" And the elephant hasn't any first incisors at all."

" Oh!" exclaimed Perry, " I'm beginning to get hold of the idea. The Moeritherium shows how the tusks started."

" In a way, though not directly. Moeritherium never developed tusks from his teeth. Now you get Antoine, sometime, to show you the details of the teeth of a typical mammal. You'll find that there ought to be forty-four. Although he had little tusks, Moeritherium kept a fairly complete set of teeth, while Paleo-mastodon, in order to get real solid tusks, was compelled to sacrifice all his incisors but four. You'll find that the important things in paleontology are teeth and feet."

" That's what I always strike in books. Just why is that, Uncle George?"

" Think a bit, and figure it out for yourself."

Perry stared at the Moeritherium skull, and tried to picture the development of life in primitive times, millions of years before the first man walked the earth.

" I suppose," he said, after quite a long pause, " it's because the two main things an animal had to do was to eat and to avoid being eaten. Animals with weak teeth had to give place to animals with better teeth when the food got harder to chew, and animals that were likely to be eaten had to find ways of escape. The ones with poor feet were caught and eaten, the swift ones got away."

"You see the importance of slight differences in teeth, then?" the scientist said. "Some of these days, when you think that the details of an animal's bones or teeth are dry learning, remember how here, on the Libyan Desert, you saw for yourself the dawn of the elephant's tusk suggested in the slight extension of the second incisor of the Moeritherium, or the beast of Lake Moeris."

"And were his feet like elephants' feet, too?"

"Yes, in a measure, but with one great difference."

"What was that?"

"Moeritherium was a marsh animal, Paleomastodon was not."

"How can we tell, Uncle George?"

"By the feet. Then, the later animal had a trunk and the former did not."

"How does that show up?"

"By the length of the legs and the neck. There is reason to think that the legs of Moeritherium were fairly short and his neck long enough to reach the ground, certainly long enough, when he was standing in water, to enable him to eat marshy vegetation. There is no sign of a long upper lip, like that of a tapir, nor a trunk like that of an elephant. Now in Paleo-mastodon, his legs were longer and his neck shorter. Therefore, even if we had no other signs, we could be sure that he must have had a trunk."

"Oh, I begin to see now," said Perry. "If an elephant had a long neck, he wouldn't need a trunk. A trunk is a scheme used by a long-legged and short-necked animal to get food to its mouth. But I always thought a tapir was on the way to an elephant because of the long upper lip."

"And now you see that the upper lip of the tapir and the trunk of the elephant are the result of the same principle operating on two entirely different kinds of animals, for if you just looked once at the feet of a tapir and at those of an elephant you'd never make the mistake of supposing them to be even distantly related. The teeth are different, too, everything's different, except the lengthening of the lip. It never occurred to you to think that an ostrich and a giraffe were related because they both have long necks?"

"Of course not."

"Or a hump-backed salmon and a camel because of the hump?"

Perry laughed.

"Then don't get led astray by superficial resemblances. Remember the importance of the feet as a means of telling on what kind of soil an animal lived, and the teeth in telling what kind of food he ate, and that will help you more in paleontology than anything I know. You'll trace some queer relationships by feet and teeth, Perry, between pig and hippopotamus for example, and between goats and oxen.

"I suppose that every man thinks his own line is the best, but I tell you, my boy, I've never found anything one-half so interesting as the piecing together, bit by bit, bone by bone, of a life that was lived a million years ago, on a world on which no human eye has ever looked. Books of travel will give you pictures, Perry, of things that there are in this world only a few hours' or a few days' journey away, but the books of travel that you and I are reading, my boy, will give pictures of scenes that no railway train can reach, and will reveal oceans that no steamship or sailing craft can cross."

That evening when they were sitting around the tent, vainly trying to keep away the flies that buzzed perpetually around their heads, Perry asked suddenly:

"Uncle George, how far back in geology did flies begin?"

"Carboniferous Period," the professor answered. "We find their wings in the seams of coal, but probably early forms lived long before that. Those flies, however, belonged to the group that have an imperfect metamorphosis, such as the dragon-flies and cockroaches. Cockroaches, you know, Perry, are very ancient. But the house-fly, the kind that seems to be annoying you, my boy, isn't so very old, certainly not much before the middle of the Age of Reptiles."

"I wish their teeth or feet or something hadn't developed properly," the boy replied savagely, swatting at one that persisted in trying to settle on his nose. "Something ought to happen to make them die out."

"Not much chance, I'm afraid," the scientist responded wearily, "the fly isn't particularly likely to die out soon. He squats on a baking rock in the equator and he perches on an ice-floe in the Arctic Circle. There's not an inhabited island—no matter how far from all other land, that hasn't got some kind of a fly on it. He's been on the job for fourteen million years, and there are over two hundred thousand different species of fly still. I believe that when the last man lies down for his last sleep on some summer evening, there will be a fly buzzing around to settle on his nose."

"One wouldn't think there was much attraction to bring flies out to this desert place," put in Perry, "but they're like a plague here now."

"Flies were one of the ten plagues of Egypt, weren't they," suggested Antoine, "and I suppose they will plague Egypt to the end of time."

"There are no mosquitoes here, at least," Perry's uncle reminded him, "not unless you bring some up from Birket-el-Qurun. There are plenty of them around the lake. But as long as the only water we get is what is carried here in fantasses by the camels, we're safe from mosquitoes, because, as you know, those pesky little insects have got to have stagnant water in which to breed."

"I'd almost be willing to swap this swarm of flies for a few mosquitoes," declared the boy, waving his arms around him frantically. "They're in the sleeping-tent; they're everywhere."

"Well, my boy," his uncle said, "if you're planning to go with me to Zeuglodon Valley to-morrow, you'd better cheat the flies and take a good long sleep. You think your backbone—over which you made such a howl—is sufficiently straightened up to tackle a long camel-back ride? "

" It's a little sore still, even after two weeks' rest," the boy admitted honestly, " but I'd want to go if it were twice as sore."

" No use reasoning with a lad when he's set," his uncle commented, shrugging his shoulders. " All right, then, be ready early in the morning."

An hour after sunrise the party of three started off, Dr. Hunt, Perry and the chief camel-driver, with two camels carrying water and provisions. It was not until the party was well on its way that Perry realized that this was no idle and easy jaunt. The best and the fastest camels had been picked for the trip. Seventy-six miles had to be covered, thirty-eight each way, and there was nothing remotely resembling a trail.

By lunch-time the party had descended over the various benches and declivities to the level of the lake of Birket-el-Qurun and the noon-day halt was made near the western border of the lake. Rough stony country with numerous sand dunes then confronted the party. Traveling at forced speed, one of the camels dropped and had to be sent back. This reduced the amount of water that could be carried on the trip and made it necessary to put every one on short rations. Somehow the very knowledge that the supply of water was scant seemed to make Perry all the thirstier. His tongue got thick and seemed to fill up the whole of his mouth. As the afternoon wore on, the torment from thirst became so great that the lad actually forgot the pain in his back, due to the racking, staggering gait of the camel. The slightly cooler air of evening helped him a little, but his tongue was far too swollen for him to be able to speak clearly when at last camp was pitched for the night on a rock waste flecked with patches of sand.

"How do you feel, Perry?" said his uncle.

"Bully!" answered the boy.

"Don't want to take up camel-driving as a profession, eh?"

"Not quite, Uncle George," was the response. "Still, this isn't a fair sample of a trip, is it? It's harder than most caravan routes, surely."

"Not to a true son of the desert. Michawi, there, seems perfectly content. So far as I'm concerned, I'm willing to admit that it's about all

I care for and I think the natives were wise to name this region what they did."

"What is its name?"

"The Gar el Gehannem, or, as we should call it in the States, Hell Butte."

"Have we much more of it?"

"The worst is still ahead, Michawi says. But we'll strike the valley before noon."

An hour's travel the next day brought them to what was undoubtedly "the worst of it." The entrance to the valley was blocked with high, sharp-ridged dunes, of a loose shifting sand. Even the camels with their soft cushiony feet had much ado to keep from sinking deeply into it, and as there was no possibility of getting them over with the riders remaining in the saddle, Perry had to get off and lead his beast over the ridges. Into the blistering sand he sank, even more deeply than the camel. There was a light but hot wind blowing, and as this breeze topped the crest, it blew what might almost be called a thin spindrift of sun-heated sand into the faces of the travelers. The effect was like that of putting one's face on a heated emery wheel. The camels didn't like it, either, and said so, their harsh bubbling roar being most rasping to the temper.

"Keeping up all right, lad?" his uncle asked him once, after they had crossed a particularly vicious bit.

"Oh, sure, I'm all right," Perry answered cheerily. "But I think they hit it off when they named this place."

At a few moments after eleven o'clock, the party topped the last of the ridges and looked down into Zeuglodon Valley below.

Bones, bones everywhere.

Skull, ribs, and the backbones of the Zeuglodons or primitive whales lay scattered on every side. Clear to the horizon, the gleam of white here and there amid the sun-burned rocks and patches of sand, told of the world's greatest burying place of fossil whales. Ten thousand monsters lay around them. A day's search would have produced enough skeletons to supply all the museums of all the countries in the world.

"The sea must have swarmed with Zeuglodons, Uncle George," said Perry, breaking silence when at last the sand-dunes were crossed and they were in the famous valley itself.

"Apparently it did," was the reply, "for Zeuglodons had a wide distribution. Thousands of specimens have been found in our Southern

States, showing that, in those times, the Gulf of Mexico was a great deal larger than it is to-day. So thickly scattered were these bones on southern farms that foundations—for example like those of corn cribs—have been made of the vertebræ of Zeuglodons."

"They must have been whacking big," said Perry, looking at the section of a backbone that protruded above the ground. "Bigger than anything we've got to-day."

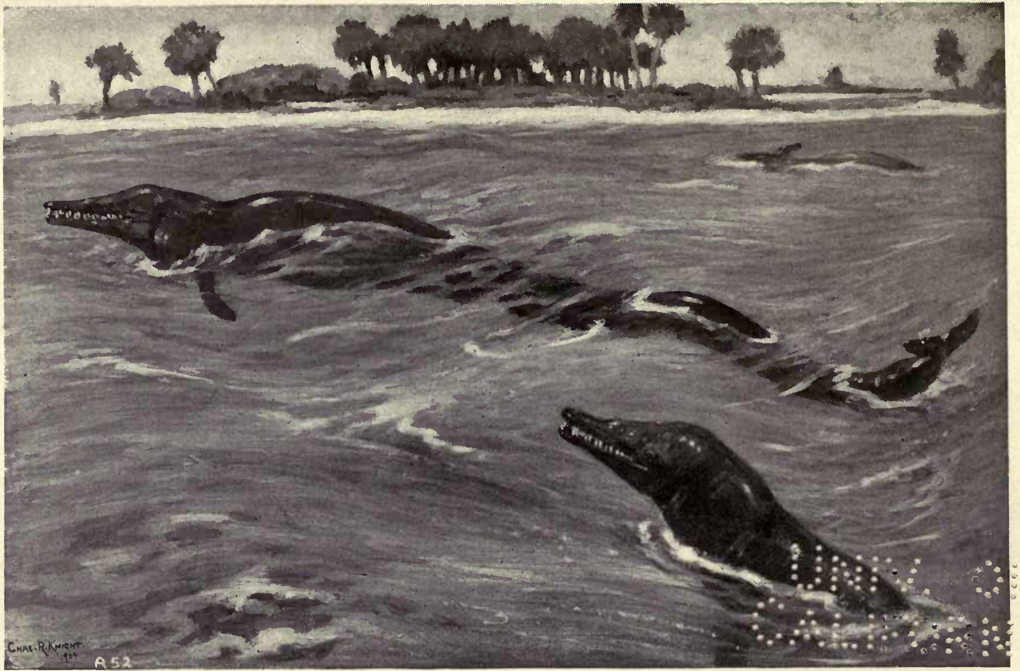
"No, not as big as whales," the scientist corrected him. "Few Zeuglodons were more than fifty feet long."

"Still, fifty feet isn't bad."

"Fifty feet is a good length," the professor agreed. "And Zeuglodon was a queer-looking beast. It's hard to realize that he could have had so large a proportion of tail to so small a body and head. The Zeuglodon's head was only about four feet long, the body wasn't over ten, and it lugged forty feet of tail behind."

"Regular sea-serpent," commented the boy. "I don't suppose the tail was very big through?"

"Even the body was only about seven feet thick," the scientist replied. "With those sharp teeth," he stopped and picked one from the


CHAS. R. KNIGHT 1904
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Courtesy of American Museum of Natural History.

Zeuglodon, the Primitive Whale.

The masters of the ocean in Eocene times, whose skeletons are found in many parts of the world, America included.

ground, "yoke-shaped, as you see; with powerful paddles like those of a fur seal and with that tremendous tail, Zeuglodon must have been able to get around pretty lively."

"Mammal, of course?"

"Certainly."

"How about its hind feet, then?" asked the boy. "I know the whales have lost theirs; did their great-great-great-grandfather who left his bones here have any hind legs?"

"He did," said the scientist, "but they were rudimentary and he kept them tucked away under his skin. Some skeletons show them plainly. In the still earlier form, Prozeuglodon, these rudimentary forms are a little more distinct."

"Why do you suppose the Zeuglodons died out?" queried the lad.

"Hard to say," his uncle replied; "possibly because they had too much tail for the head. So big a tail needed a lot of feeding and so small a head made it necessary for him to dine off small fish. He may have dived deep for squid, the way whales do, but, even so, the Zeuglodons seem to have been driven out by the fossil sharks."

"Were they bigger than modern sharks?"

"They were," answered his uncle dryly.

" One of these sharks, who has been christened the *Carchadodon Megalodon,* or the great-toothed shark, may have been over a hundred feet long, and certainly was not less than seventy-five, and his teeth were three times as big and as long as the teeth of the biggest man-eating shark in the seas to-day. They had a few score of these teeth each."

" I should think they would have made it hot for the Zeuglodons."

" They probably did. Those shark teeth are found everywhere. They must have made the seas a terror during Miocene times."

" And then what happened? "

" Who knows? Probably, like the Kilkenny cats, after they had eaten everything else in sight they started to eat each other up, and either were eaten or perished for lack of food. At least it is sure that after the Miocene sharks came on the scene the Zeuglodons disappeared. And their greatest burying-ground is here."

" I'll take a bunch of their teeth home," said Perry, filling his pockets, " but what are you going to do about full-sized specimens, Uncle George? "

" I shall not try to take any," the scientist answered him. " This is a difficult place from which to transport a large complete skeleton. There is no need. The National Museum at Washington has a very perfect example of Zeuglodon. We've already got a few score tons of fossil material imbedded in plaster and strongly boxed for shipment at the camp, and I hardly feel like bringing a caravan here to try to transport an entire Zeuglodon away. I shall be satisfied to make sure that there is not some species showing up above the ground, heretofore unknown to science."

For three long hours in the very midmost heat of the day, in that broiling valley, the scientist and his young follower worked hard examining the thousands of skeletons that littered the expanse, and then Dr. Hunt gave the word to return. Perry was tired, the heat had made him dizzy, and his back felt as if he had a sore on each and every vertebra, but his pockets were full of Zeuglodon teeth, and he gloated over the fact that he had been one of the very few people in the world to visit the great Zeuglodon Valley where the bones of ancestral whales lie buried, and he was well content. Exactly three hours after the halt, the party started home for the camp.

Back they went over those sand dunes, with the camels slipping and sprawling in every direction, back against the hot flying sand; back with the perspiration oozing at every pore and the tongue so parched that it licked up greedily such sweat as ran into the corners of the mouth; back with the lungs aching and the breath coming in quick, short gasps; back through the hot afternoon and until the great globe of fire dipped below the horizon, and darkness and coolness had come. On, then, still over the rough and stony approach to the Gar el Gehannem, or Hell Butte, using a slightly different route, until at last came camp, near the village of Qasr Qurun, where water, indifferent but possible to drink, was to be had.

A score of village dogs barked as though each had a score of throats, yowled in loud welcome, and bayed the whole night through. It mattered little to Perry. He was tired to exhaustion, and lay asleep completely happy, while in the pockets of the coat that lay beside him in the tent, were a couple of dozen Zeuglodon teeth, that he had brought from Zeuglodon Valley with his own hands.

The next day saw the party climbing homewards, up again to the raised beaches far above the ancient lake, up past the level where the Eosiren was found, up past the level of the ancient temple, up the great cliffs which marked the ages during which the sea had rolled over them, up to the levels of the ancient river deposits and then over the long miles to where the peaked outline of the distant tents held out the promise of a welcome. Yet it was the evening of the third day before they reached it, fifty-eight hours since they had left the camp, of which thirty hours had actually been spent on camel-back.

"You're a seasoned traveler now, Perry," his uncle said, as the camel sank to its knees and the boy clambered painfully out of the saddle, "seventy-five miles in fifty-eight hours is quite a feat."

"It was great," said Perry, "and I wouldn't have missed it for the world. What's a little ache in one's bones compared to doing a stunt like that!"

"After the work comes the fun," put in Antoine. Then, turning to the leader of the expedition, he continued:

"Dr. Hunt, Mahmud Abd-el-Baqui, one of the chief Arab Sheikhs, is in the neighborhood. He sent a messenger this morning and when I told him that you were expected home to-night, he said that he would call. Mr. Wyr says that he is quite an important chieftain and that we ought to receive him with some ceremony."

"I feel more inclined for a rest than for ceremony," the scientist replied frankly, "but of course we'll do whatever is the proper thing on such occasions. Will you do me the favor of giving me your advice, Mr. Wyr? I am quite uninformed as to the procedure in such matters in Egypt."

The Government Survey expert smiled.

"I jolly well knew you'd want me to look after such questions in your absence," he answered, "and I've made arrangements for a feast."

"Do you suppose he will bring a party, then?"

"Rather!" the other answered. "Mahmud Abd-el-Baqui wouldn't stir without an armed escort. He's a Bedouin, remember."

"One of the chaps who rob caravans?" queried Perry excitedly.

"I haven't a doubt in the world," said the Englishman, smiling, "that the very gentleman who is coming to see you has plundered many a caravan in times past."

"Then he's a real robber chief!"

"I fancy he wouldn't call it robbery," was the reply. "I was talking with one of the most noted Bedouins once, when we were on a punitive expedition into the desert, and he said that the occasional plundering of a caravan was just the same as the actions of civilized nations in taking customs duties on all cargoes coming into their ports. He jolly well took the ground that the Sahara belonged to the wandering tribes and that they had a right to levy tribute."

"There's something in that idea," admitted the boy. "Is that why the chief never travels without an escort?"

"Not only that, but one Bedouin tribe is very often at war with the other. See, Perry, here they come now!" He pointed with his finger. "Wouldn't you rather that they came in peace than in war?"

The boy looked over the wide ledge and there, sharply outlined against the evening sky, was a small band of horsemen, all armed with lances and dashing along at a speed which could be compared to nothing but a charge. Long white cotton mantles covered the Arab horsemen, each had a striped cloak made of camel's hair cloth floating behind him in the wind, and a yellow and black striped handkerchief, folded somewhat turban-wise over their heads. The chief was accompanied by two of his brothers and the whole party came on at a full gallop.

It seemed as though they were going to charge straight through the tents, and Perry prepared to jump. But he kept his eye on the Survey expert, and seeing that Wyr remained motionless, the boy did not stir. The Bedouins were within ten feet of the party when they halted suddenly, so suddenly that the boy expected to see the fine-drawn legs of the Arab horses snap under the sudden shock. Such magnificent horses the boy had never seen.

With the Egyptian Survey expert as translator, greetings were exchanged, and then the Sheikh called certain of his escort to come up with a sheep and some turkeys, which were formally presented to "El Mudir." In return, the Arabs were invited to a banquet, which was prolonged far into the night.

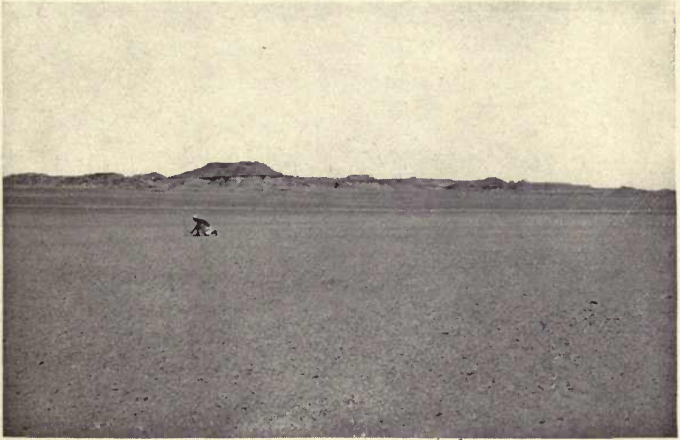
In the course of the conversation, El Mudir happened to speak in terms of praise of the Arab horses, and the next morning, to the surprise of every one in the camp, three were sent as a gift, with the Sheikh's compliments.

"Antoine," said Perry to his friend later in

Courtesy of American Museum of Natural History.

CLIMBING TO THE FOSSILS.

Advance members of the Museum expedition arriving at one of the broad "benches," where three-million-year-old bones were found.



Courtesy of American Museum of Natural History.

FINDING A SEA-COW SKELETON.

A broad bench in the Fayum, Egypt, with a fossil exposed. The top of the butte in the distance is the level of a later geologic period.

the day, for it was one of the fortnightly camp holidays, "I've never been up on the level of the desert. Let's go!"

"Yes, yes," his friend answered, and soon after breakfast the 600-foot climb began. As they climbed higher and higher, the whole saucer-like depression of the Fayum spread before them, and the bed of the old Lake Moeris could be clearly seen. Perry realized to the full why this, of all places on the desert, should be the point for fossil-finding, for six hundred feet of modern deposits lay above the exposed strata in which the fossils lay. At last, the final bench was surmounted, and Perry looked over the blackened pebbly waste. In spite of his former experience, the trip over the dunes to Gar el Gehannem had made him think that the heart of the desert might really prove to be the mass of billowing sand familiar to him in pictures, and he was again disappointed. In the far distance, however, a golden light glinted across the wind-swept pebbled waste.

"Are there sand dunes over toward the horizon, Antoine?" he asked.

"Yes, yes," was the reply. "That is a fearful place. How many miles of sand dunes it is, no one knows."

"You mean it has never yet been crossed?" cried the boy, with a sudden hope that there might be a piece of exploration work that sometime he might do.

"It has been crossed many times by caravans, but only from north to south. There is an oasis at Kufra and camel trains reach there from the north and from the hills to the south—from east to west, never. No one has dared that journey."

"But from here, Antoine; if a chap should try to go straight across there from here?"

"Over the Libyan Desert?" The other shook his head. "Never! Most of the Sahara is stone and rock, as here, but the Libyan Desert is sand, sand like the pictures you see of the desert, dunes from fifty to two hundred feet high, no water, no life, no vegetation. It is a waste as large as France and Germany together, where not a blade of grass grows, and where the only living things are creatures like the jerboas that have learned to do with so little water that a really good drink might kill them, and even they only live on the edges of that desert. No, Perry, you cannot explore that place, there would be no way to live."

The boy looked longingly at the southwestern horizon.

"I'd awfully like to try," he said.

A slight and very hot puff of wind reached them, and, shading his eyes, Antoine looked anxiously at the distant dune hills. A thin curl of dust was rising from them.

"The sand is blowing," he said warningly; "we'll go back."

It was a false alarm, however, for the wind died down, and before Antoine and Perry reached the camp again, the slight orange light that had overspread the sky had died away. The boy's uncle greeted him with relief.

"Glad to have you back," he said, "I thought we were going to have a sand-storm, and that's a thing it's best not to be compelled to face. We've escaped so far; I hope our luck holds."

To himself Perry thought differently, he felt that he would not have had a real taste of the desert unless he had a chance to see one of the sand-storms of the Sahara, but, as the time drew near when the expedition was scheduled to return, he almost lost hope.

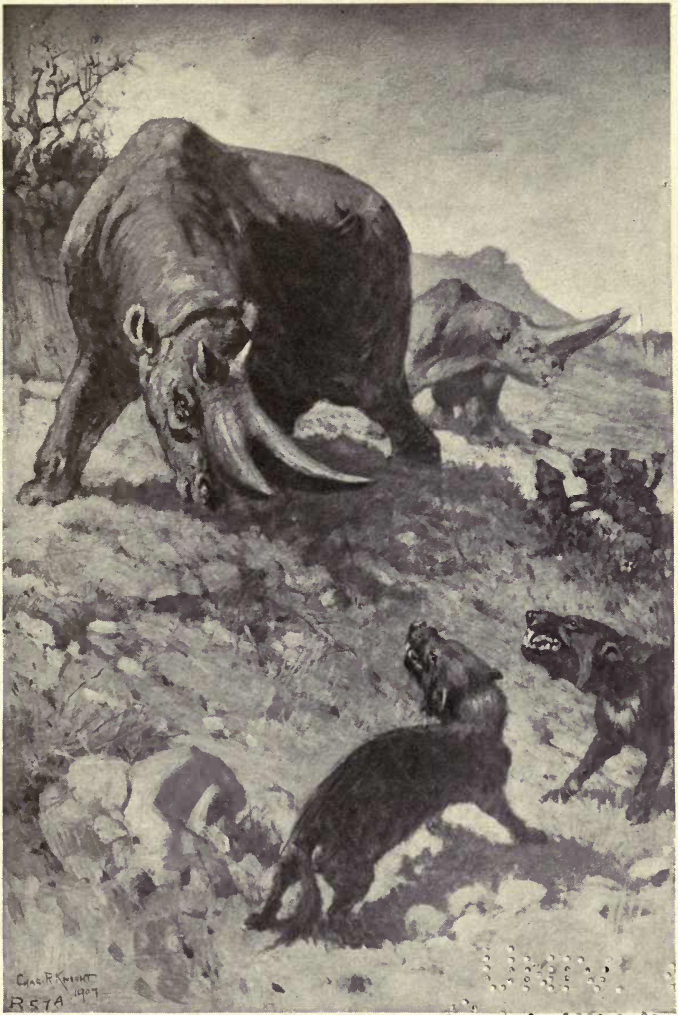
The very week before the day set for leaving, Perry's laborers unearthed the skull of a second Arsinotherium, a young bull, that must have stood nearly six feet at the shoulders, carrying four horns, one pair a foot in diameter at the base and three feet long.

" Must have had some neck-muscles to carry those horns," exclaimed Perry, gloating over his find, and watching the long and difficult job of packing the bones in plaster and huge wooden cases so that they might be loaded on camels and so that they might withstand transhipment across the sea.

" Not only to carry them, but to use them," commented his uncle. " Even Arsinotherium, big as he was, didn't have everything his own way. There were Creodonts, such as the Pterodon, to worry him. They traveled in packs like jackals and the sharpest horns would be none too sharp for defense against a pack of those."

" Were they bigger than jackals, Uncle George? "

" Yes, a little. But of course the biggest of the Creodonts were not as large as the great 'sabre-tooth' tigers of America and of Europe. Those are not found in this ancient African fauna. But you'll have a chance to get acquainted with the sabre-tooths, Perry, when you come to do fossil-work in the States. There's no lack of fossil beds there."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Courtesy of American Museum of Natural History.

The Four-Horned Giants at Bay.

The rhinoceros-like Arsinotheres of Egypt in the Eocene Period, attacked by a pack of hyena-like Pterodons.

"I hate to leave here, Uncle George," said the boy, looking around him regretfully, "it's all been so jolly and everything has seemed so new. But," he added, with the action of brushing insects away from his eyes which had become habitual after the weeks spent on the edge of the desert, "I admit I'll be glad to get away from the flies."

Two days later, the caravan was once more upon the move. Back again over the trail to Tamia they went, passing by the ruined temple of Qasr el Sagha, seeing the ruins of Dine in the distance; not far from the place where Perry had found the Eosiren, and on through the little village of Kom Mushim, a mere cluster of huts on the edge of an ancient Egyptian city. Thence through fields of roses, from which the famous attar of roses is made, the camels passed and on to the headquarters of the expedition at Tamia, where an Arab entertainment was given by the Mamour of the district in honor of the expedition.

Next day the homeward journey was begun. Up through the Fayum hollow, again, the camels climbed and out on the desert beyond. Not skirting the edge of the Nile this time, but striking boldly over the waste, Michawi led the caravan, and the noon halt came in the open blaze of the sun, the pyramids of Ghizeh showing faintly in the distance.

The party had hardly traveled more than an hour's journey after the halt, when a queer hot whiff of air reached Perry's nostrils. He remembered the smoking sands that he had seen from the crest of the cliff above the camp, when looking over the Libyan desert, and glanced over his shoulder. The camel drivers had noted it, too, but there was no gain in urging the camels onwards, even if the animals could have been persuaded, safety was too far away.

In front of them was a line of low sand-dunes, and before they reached this, Michawi halted the caravan. The camels knelt down, laid their necks along the ground and closed their nostrils with the special protection Nature has given them. Every one dismounted, and the Arabs threw themselves upon the stony ground, to leeward of their camels, covering their faces with their garments.

"Lie down, Perry," said his uncle, who was following the Arabs, "you can't stand up and defy a Sahara sand-storm that way!"

But the boy wanted to see all that there was to see, and stood upright, facing the quarter from which the storm was coming. Imperceptibly the wind seemed to grow hotter and still more hot, and the fine particles of sand tingled against the lad's face. The sky slowly turned gray with a tint of orange-color, but as yet the breeze was not strong. A moaning sound was in the air, very faint, like the whine of the sea in a shell.

Then, without the slightest warning, with a screech the sand-storm struck. Perry went down like a nine-pin and rolled over and over, as a tumble weed rolls upon the prairies, until he fetched up against one of the kneeling baggage camels. To the screech of the storm overhead was added a deep vibrant tone from the sand-dunes ahead. Perry remembered that Mr. Wyr had told him that in a sand-storm all the dunes begin to move, and he knew the noise was caused by the rapid action of the particles of sand grinding over each other.

The wind was terrifically hot. Sand was in the boy's eyes, his nose was so full of sand that he could not breathe through it, and he scarcely dared to open his mouth for fear that he would choke. Following the Arabs, he grabbed his linen pocket-handkerchief, and breathed through the folds of it. In an instant he felt better. He was breathing air that was not full of the particles of sand. But, with his nostrils choked and with the air coming but slowly through the linen, he felt that he would burst.

Once he took away the handkerchief to get a deep breath, but as soon as he began to inhale, he stopped. The air felt as though it were full of needles and pricked at his lungs like living fire. Straightway he put the linen back, almost to suffocate again.

Then—silence.

The Arabs rose from the ground, the camels opened their nostrils, and in the second it took for Perry to get on his feet again, the storm was gone, gone so absolutely that there was not a trace of it on the horizon. Only, in the distance, the peaks of the Pyramids of Ghizeh which marked the end of the Egyptian expedition, glinted nearer than before.

CHAPTER IX

THE MARCH OF THE MASTODONS

ALMOST two years to a day from the time that the sand-storm struck the caravan on its way home from Ghizeh, Mr. Hunt, the old merchant, looked up from his morning mail at the breakfast table and said to his son:

" Perry, your Uncle George is back from Patagonia. He writes me from Washington that he has had a marvelous trip in a long search for a still-living specimen of the giant ground-sloth and that he will come out here to pay us a visit."

" When's he coming, Father? "

" In about two weeks, he says."

" My word! I wish I could get that Pteranodon mounted before he comes! "

" Well, can you? "

The boy thought for a moment.

" I might be able to, at that. You know, Father, that Pteranodon of ours is going to be far and away the best Pteranodon in any museum in this country. The American Museum of Natural History in New York will envy us. I wondered, when you bought the specimen from that Kansas chap, that you didn't send it to New York."

"I wanted to give our own little museum a start," the old merchant replied, "and it seemed to me that if it had on exhibition at least one thing that was the best of its kind in the world, that exhibit would help its reputation more than anything I knew. I figure that the Pteranodon will put our local museum on the map."

"It sure will," agreed Perry.

"How are you getting along with the mounting of it?"

"Mighty well, I think," the boy answered, "seeing that I'm doing it nearly all alone. But I'd never have been able to tackle it so well if you hadn't invited Antoine here last summer. He taught me more about preparing museum specimens in a month than I'd have found out from our chaps here in a year. Why don't you come over and see it now, Father? I've got all the plaster off, and the bones are laid out on a table ready for setting together."

"Very well, I'll go with you now," the merchant said, looking at his watch. "I'm quite keen to see how the thing shapes up. After all, I bought those bones on faith. I haven't even looked at them yet."

"It's a crackerjack," the boy assured him, "the best that's ever been got hold of. We're all tickled over it. The skeleton is pretty well cleared away from the chalk rock now, and I'm having heaps of fun making the model."

"If you can manage to get the mounting of the Pteranodon finished," his father rejoined, as they stepped into his car, "I'd be glad. I'd like to have it ready to show your Uncle George when he comes."

In response to questioning about flying reptiles from his father, Perry, during the ride, chattered steadily about pterodactyls of every shape and size, until they stopped at the Museum building. The boy took his father to the top floor, which was used as a workshop. Running along one whole side of the building was a long table, and there, spread out upon it, were a number of blocks of pinkish chalky stone. None of these blocks was more than a couple of feet long, and most of them were only a few inches in length, but from each of them protruded a brown substance which, on close examination, displayed itself as bone. The merchant looked at the fragments with interest, but also with a puzzled air.

" Is that all there is to it, just those little bits of stone?" he asked.

" Why, Father, what did you expect? "

" I thought you had almost a whole skeleton! That collector fellow told me there were very few bones missing."

" There aren't many of them lost, as a matter of fact," the boy responded. " No, really, Father, it's a bully specimen."

" It doesn't look it."

" Wait just a second," the boy rejoined, " and I'll show you! "

He hurried to another part of the workshop and came back with a curiously shaped frame on which was stretched a piece of brown oiled-silk.

" What's that? "

" One of the wings for the model," the boy answered. He laid the frame down upon the table over the blocks that contained the bones, and, as though by magic, the whole shape of the great Pteranodon seemed to spring into view. The missing bones presented themselves to the imagination as though they were there, for the spread of the wing showed exactly how they would fit in.

A group of little claws, that had been chiseled entirely free from the chalk, were carefully placed by Perry at the ends of the wing-fingers.

" So that's what he looked like! " exclaimed the old merchant.

" I can give you a better idea yet. Hold on a bit," said Perry, and he hurried away again. Back he came, carrying in one hand the companion wing, and in his other hand a wax model of the head and towering crest of the great flying reptile. As soon as this latter was placed beside the scattered array of bones on the table that represented the skull, their relation to each other was shown at once. Perry then laid the other wing on the table, the two great brown membrane-like wings stretching their whole spread of twenty-one feet, and making it seem as though that giant of the air had just glided down upon that workshop table.

" Great guns," said the financier, " what a monster! "

" Doesn't that give you an idea of his size, though! " exclaimed the boy.

His father looked thoughtfully at the bones of the skeleton lying embedded in the pieces of Kansas chalk in which they had been found, and at the model with its semi-transparent wings that lay upon it, and said thoughtfully:

"It's too bad we couldn't make an entire hall, Perry, containing huge life-size models of all the kinds of trees that lived at that time, with perhaps a cliff and sea-shore and a few of those Pteranodons—models of course—flying around. I believe in that way people would get the idea of archaic life much more easily than they would from specimens in a glass case."

"Oh, Father!" cried the lad excitedly, and stopped.

"Well?"

"It would be bully," the boy agreed, "but you'd need such miles of space! The tree ferns would have to be a hundred feet high, and the cliff two hundred feet, so as to get the perspective right; the hall would have to be a couple of hundred feet square, and we'd need a different hall for each of the important periods."

"About how many?"

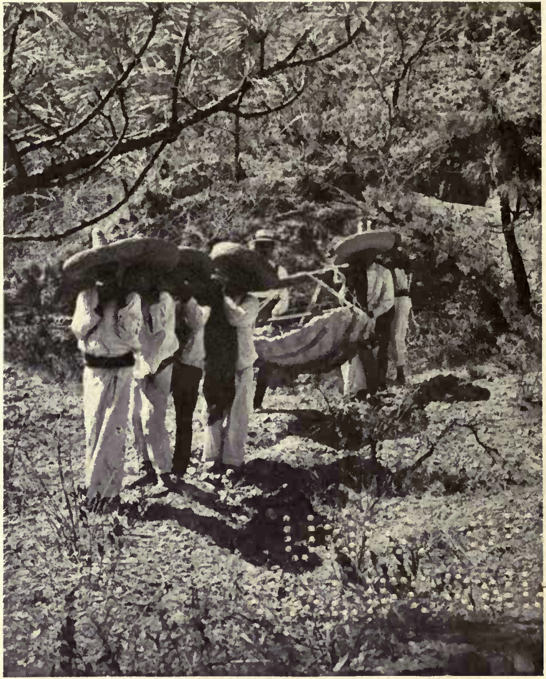
"Seven or eight, I should think."

The old merchant shook his head.

"I'm pretty well fixed," he said, "but I couldn't stand for anything like that. Those halls would cost half a million apiece."

Courtesy of American Museum of Natural History.

INTO THE HEART OF MEXICO.
Museum expedition leader in the Tree Cactus Country.



CARRYING SHELL OF GLYPTODONT
Eight Mexican peons bearing armor of giant armadillo.

"If you wanted to, Father—" the boy began, and stopped.

"Well?"

"You can get pretty nearly that effect by making models on a small scale, say, an inch to the foot. Then the tree ferns would be ten feet high, the Pteranodons would be two feet and all the other animals would be to scale. If you worked in the perspective and did the lighting the way that it's done on the stage, people could get almost the same effect as by a big hall."

The merchant looked thoughtfully at his son.

"That's a good idea of yours, Perry," he said.

"It's not my idea," the lad rejoined, "there's a chap who's worked it out for the Children's Museum in Brooklyn and the Metropolitan Museum in New York. His stuff is great!"

"I wouldn't mind spending a little money for a thing like that," the financier answered. "Models like the ones you're talking about are just what the small museums ought to have."

"Big ones, too," put in Perry.

"Of course. But a considerable part of the funds of the larger museums must be spent on expeditions and scientific work on a broad scale. That's their main work. But in order to get the public interested—which I think is an important part of a museum's duty to the people—that model idea catches me about right. Why don't you have that fellow come on and spend a couple of days with us? I'll see that it's worth his while."

"I'll ask him like a shot, if you're willing," Perry replied. "I'd enjoy it heaps! I've never had more fun than I did last summer when you asked that American Museum artist down here. Jumping Jehu, couldn't he paint!"

"Yes," his father agreed, "when it comes to restorations of fossil monsters, he's about the best ever. You picked up quite a bit about painting from him, too."

"I certainly did. And I'd like to know a little more about modelling," the boy added shrewdly, well knowing that his father was always willing to help him in every way.

"All right, then, Perry, if you want to drop a note to that sculptor-modeller, go ahead."

The financier started to go and then turned back.

"I've been thinking about the missing parts of that Pteranodon," he said. "Don't you suppose, Perry, that the rest of those bones ought to be somewhere around? If I sent the collector another check, do you think he could dig around and find some more? I'd like to see that skeleton absolutely complete."

The boy shook his head.

" I don't believe it would be any use, Father," he said. " You see, that Pteranodon was found in chalk."

" Well? "

" That means that he must have died and tumbled into the water and sunk to the bottom. The floor of the sea is pretty flat, especially when it's made up of those microscopic shells floating down, so that the bones, when they reached the bottom, must have been spread out on a level. They're too light to sink in much, and as the chalk shells steadily rained down, they covered the old monarch of the air like a sheet. Then the bottom of the sea rose and became dry land. When, millions of years later, and probably not long ago, rain and wind and all the rest of the things that make erosion, washed away the chalk that had accumulated on top of the Pteranodon, he lay there just as flat as ever, flatter, because his hollow bones were crushed by the chalk that once had lain on top of him."

" Yes, that's true," said the merchant thoughtfully, " the bones would be on a level."

" Sure. So if the collector who found those bones cleared away a space a little larger than the spread of the Pteranodon, say a stretch thirty feet square, and worked that down to a level, he'd really be looking at the bottom of the ocean as it was when the Pteranodon sank down. If he explored that stretch for a few inches further down, he'd certainly find all the bones he would be likely to find, for even an inch of chalk would mean a thousand-years' deposit."

" That may be all right, son," said his father, " and you've made a good case for the collector. But just the same, the bones must be somewhere."

" Sure, but where? See, right here, Father," and the lad put his finger on the skeleton, " there's the place where the sternum ought to be, one of the biggest bones of the whole Pteranodon. It wasn't found at all. Yet you'd think that the biggest bone would be the easiest to find."

" That's just what I'm saying. It must be somewhere. A bone from a dead bird can't get up and walk off by itself."

" No, but a big primitive fish or a crab, or something, could have pulled away the bone when making his dinner on the dead Pteranodon at the bottom of the sea. Anyway, it's a rare thing when there aren't some bones missing in a fossil. In the Fayum, it used to seem to me an awful shame that the skeletons were so often broken up into little bits. But we had to take them as they came."

"You'll make up the rest of the skeleton in plaster, I suppose?"

"That's nearly done, Father," the boy replied. "But we're not going to take the skeleton free from the chalk and mount it."

"Why not?"

"Couldn't be done successfully. As I was telling you, the bones are crushed. See, Father, a Pteranodon's bones are hollow, like a thin pasteboard tube, and the pressure of the overlying chalk has squashed them flat, and splintered them. It would be an awful job to rebuild that tubular bone. No, we're going to chisel away the chalk for about an inch below the level of the bones, soaking them meanwhile in shellac until they won't absorb any more and cementing together the pieces that are cracked and broken. Then we'll make a plaster model of the whole base, fitting in the bits of chalk we have, and we'll color that pink like the rock in which the bones were found. On that model, which will be exactly to scale, we'll be able to see exactly where the missing bones come and we'll mold them on the model. We'll color them slightly different from the true bones, so that an expert can see right away which are the restored parts, but the public will get the idea of the beast as a whole."

"And your restoration will be of wax?"

"We've got a regular composition for that, and I'm molding it over a steel frame so as to give it strength. Then I'll paint it up to look as much like life as possible."

"How do you know what color to paint it?" queried his father. "There wasn't any artist in existence to take notes when Pteranodon was flying around."

"No," Perry replied. "But there isn't any reason to suppose Pteranodon was in bright colors and a blackish-brown is the usual thing in Nature, so I'm going to make it that."

"Where are you going to put the exhibit?" queried the old merchant, as he went to the door.

"Right in this main hall," the boy answered. "It's our biggest prize, thanks to you, Father, and we're going to make the most of it."

His father laughed at the lad's confident manner.

"I hope you occasionally consult the Director," he said. "You talk for all the world, Perry, as though you were the only person in the building."

The boy colored to the roots of his hair at the implied rebuke of boasting.

"I didn't mean to," he said, "but—but I have got the sort of idea that the Pteranodon is my pet, and they've let me work it all out, almost by myself. The Director's in and out all the time, of course."

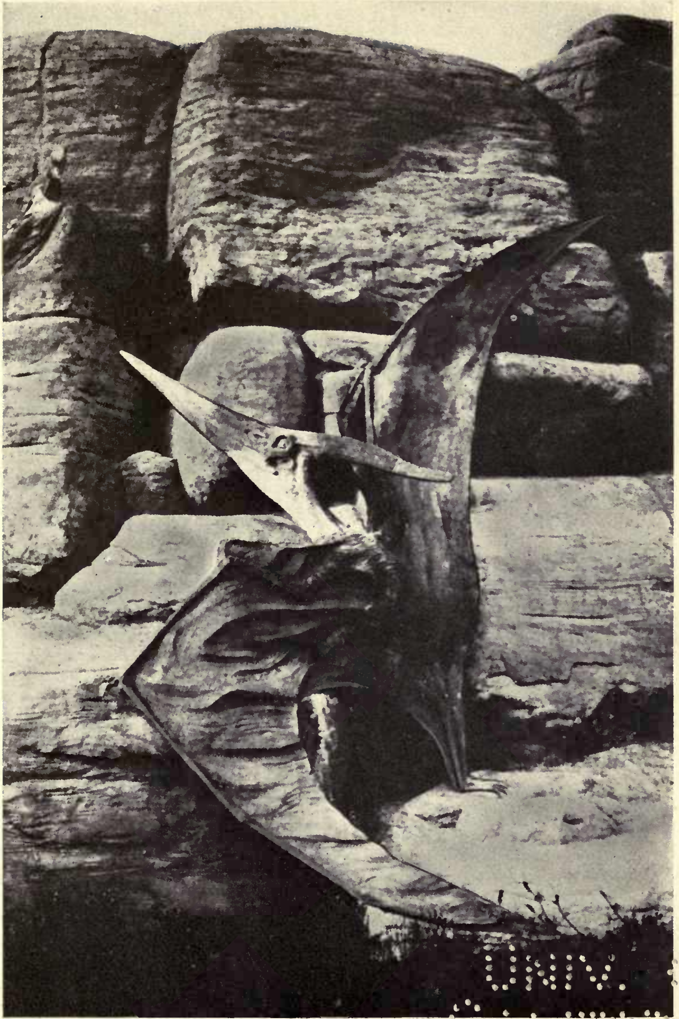
With the goal before him of having both the skeleton prepared and also the model finished and hung before the arrival of his uncle, Perry worked night and day. The director of the small museum helped him, for he too was anxious to have the museum's richest treasure on display before the coming of Dr. Hunt. Between them, they accomplished wonders, and the day before the expected visit of the scientist, the skeleton of the Pteranodon was safely affixed against the wall of the main hall, while above him, swooping downwards, was the 21-foot model of the giant flying reptile. He looked every inch his size, and the actual bones themselves, immediately below, showed how exactly true to reality was the restoration that had been made.

When, next day, his uncle came, Perry could hardly restrain his impatience until a visit to the Museum had been arranged. He was proud of his work, as proud in completing the preparation of the skeleton and the model as he had been when, one evening two years before, in the red sand of the Eocene river bed in Egypt, he had shown his uncle the skull of the Moeritherium. But, at the same time, he was a little anxious, for the director of the local museum, though a scholar, was not an expert in paleontology.

The lad was on pins and needles, therefore, when, with his father and his uncle, the car slowed up at the Museum. Perry led them into the main hall and pointed to the wall.

"There!" he said.

The professor cast a quick glance at the model overhead, but, as Perry knew well, it was not the restoration, but the actual skeleton itself that interested the scientist and he walked up to the case. Carefully, with an examination of details that amazed Perry, for even he did not realize how much importance might attach to a small groove



Courtesy of J. B. Lippincott & Co.

UNIV.

PTERANODON, CLIMBING FOR A SWOOP.

The great flying reptile, twenty-one feet long, clawing his way up the cliff to get a start for his soaring flight; restoration from Gregory, in "Geology of To-day."

in a joint, the scientist scrutinized every bone, and every fragment of the plaster.

"Excellent," he said heartily, "excellent piece of work! Very well handled indeed, Perry. You've got a real specimen there, and the preparation is first class."

The director, who had hurried out of his office on the approach of the car, heard the last couple of sentences and smiled at the boy.

"Of course," the professor continued, "there are one or two small points, quite small points, that I think might be changed."

"What?" queried Perry.

"That crest, for one thing," the scientist replied. "There is every reason to think that the Pteranodon developed that large crest sticking out the back of his head as a balance. As the genus grew in size, the toothed beak of the Pteranodon became longer in order to enable him to get food easily. Judging from the bones of his neck, which you see are small, Perry, it is unlikely that he could have carried heavy enough muscles to support the one-sided weight of a heavy jaw, and the crest acted as a balance. Now, you have the crest standing up from the skull at an angle of forty-five degrees. That would put more weight on the top of the skull and diminish the balancing effect. If you draw a straight line along the upper jaw to the skull and project that backwards, you will have the right line for the crest."

"So that's why he had that crest!" exclaimed Perry. Then turning to the director, he added, "Mr. Thompson, neither of us thought of that reason, did we?"

"Then," continued the professor, "I think you have the stretch of the wings a little too straight. The wing-finger of nearly all the Pterodactyls was curved." He also mentioned one or two smaller matters, but turning to the director of the local museum, concluded:

"I think, Mr. Thompson, if you will make those trifling changes, you will have in your Museum here without question the finest specimen of a Pteranodon extant."

"Very well, Dr. Hunt," the director answered, "I'm obliged for the suggestions. I think I'll let Perry carry them out, since you think he's done so well so far."

"He has done a first-class piece of work," the scientist said, quite enthusiastically, "one that would do credit to any museum. If you'll let me have a photograph, Perry, and the exact dimensions of all the bones, I'll write a short scientific paper on it and give you the credit for the restoration, under Mr. Thompson's direction."

"Oh, Uncle George," he said, "that would be great, but it was Mr. Thompson who showed me what to do."

"No," remarked the director, "Dr. Hunt is speaking of the restoration, and I let you go ahead on that in your own way. If Dr. Hunt writes a paper on it, the credit for the restoration is all yours. Mounting the skeleton, of course, is a different matter."

The scientist was distinctly pleased with the lad's work and reverted to it more than once in the course of the day. At the same time, the genuine scientific interest shown by the professor in the Pteranodon was grateful to the old merchant, who, as he said himself, had bought the bones "on faith."

The third day of Dr. Hunt's visit, at dinner, the scientist turned to his nephew and said quite unexpectedly:

"Perry, do you know the famous poem about the Eohippus?"

"No, Uncle George," the boy replied. "I don't believe I do."

"You are acquainted with our little friend, the Eohippus, I suppose?"

Perry grinned.

"In books and in bones," he said, "but I haven't ever met him in real life."

Then, for he never missed an opportunity of trying to persuade his uncle to take him on another expedition, he added:

"I'd be awfully glad to meet him, though, Uncle George, if you're going to pay him a visit."

"I am," the scientist replied. "But if you don't know that little bit of verse, which was written by a clever and quite well-known woman after a visit to our New York Museum, part of your education as a paleontologist has been seriously neglected, and I'm going to make up for that neglect at once." And, without further preamble, he began:

"There was once a little animal
No bigger than a fox,
And on five toes he scampered
Over Tertiary rocks;
They called him Eohippus,
For he certainly was small,
And they thought him of no value
When they thought of him at all;
For the lumpish old Dinoceras
And Coryphodon so slow,

Were the heavy aristocracy
In days of long ago."

"Except that the Dinoceras didn't live at the same time as the Eohippus," put in Perry, "he came along later."

"Poetic license," replied his uncle. "I didn't write the verse. Shall I go on?"

"Oh, sure!" answered Perry eagerly.

So his uncle continued:

"Said the little Eohippus,
'I'm going to be a horse!
And on my middle finger-nails
To run my earthly course!
I'm going to have a flowing tail,
I'm going to have a mane,
I'm going to stand fourteen hands high,
On the psychozoic plain.'"

"He got away with it, too," commented Perry, "but I don't wonder that the Coryphodon couldn't see it coming."

"Not only couldn't he see it coming," said his uncle, "but the poet represents him as being quite annoyed about it." And he continued:

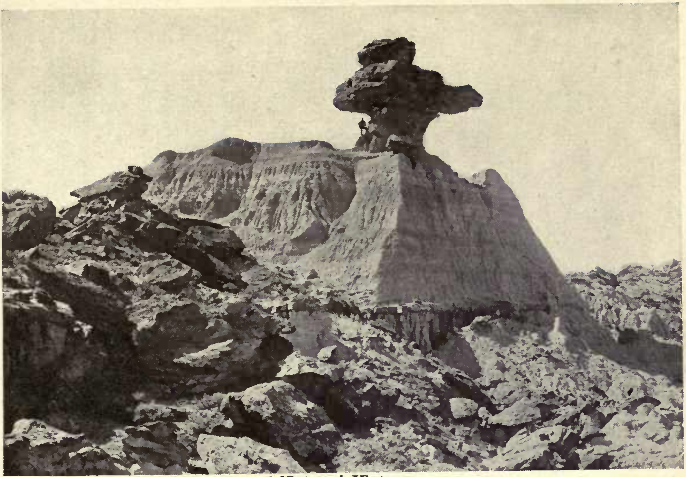
"The Coryphodon was horrified,
The Dinoceras was shocked,
And they chased young Eohippus,
But he skipped away and mocked;

Then they laughed enormous laughter,
  And they groaned enormous groans,
And they bade young Eohippus
  Go view his father's bones.
Said they, 'You always were as small
  And mean as now we see,
And that's conclusive evidence
  That you're always going to be.'
'What! Be a great, tall, handsome beast,
  With hoofs to gallop on?
Why, you'd have to change your nature!'
  Said the Loxolophodon.
They considered him disposed of
  And retired with gait serene,
That was the way they argued
  In the early Eocene."

"Loxolophodon isn't early Eocene, either," protested Perry. "It's a bully rhyme, Father, but it has got scientific kinks."

"How?"

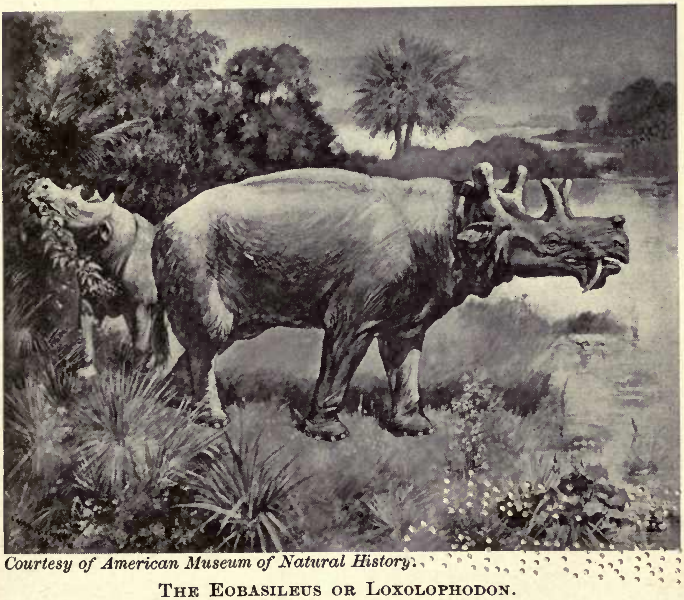
"Well, take the line, 'On five toes he scampered.' Eohippus didn't have five toes, if I've got it right. I know when I stopped at New York, on the way home from that great trip we had in the Fayum, I spent over an hour in that alcove of the horses in the American Museum, and I'm just as sure as I can be that the Eohippus skeleton they exhibited there had only four toes on the forefeet and three on the hind feet."



Courtesy of American Museum of Natural History.

FINDING THE EOBASILEUS.

Haystack Mountain, in the Bad Lands of Wyoming; the museum explorer is standing at spot where the skeleton was discovered.



Courtesy of American Museum of Natural History.

THE EOBASILEUS OR LOXOLOPHODON.

A four-horned amblypod (blunt-feet) the largest and last of his race, of which vast herds roamed over the United States three million years ago.

The scientist looked across the table at his brother.

" We're going to make a paleontologist out of this chap after all, I believe," he said. " Now, Perry, was there any horse earlier than the Eohippus? "

" There's one awfully like Eohippus that they found in the London Clay," the boy answered. " Let's see if I can remember what he's called? He isn't a ' Hippus ' anything! "

There was a moment's silence.

" Hyra—Hyratherium," he said at last.

" Hyracotherium," the scientist corrected him, shaking his head.

" That's it. But I could never quite make out, Uncle George, whether he was much different from Eohippus. He didn't have five toes, did he? "

" No one knows," was the answer. " Some of these days we may find a complete skeleton of Hyracotherium in that big stretch of clay under London, but, so far, there's only a skull known. Personally, I think he's the same as an Eohippus. Of course there are rudiments of the fourth and fifth toes on the hind feet of that type. But was there ever a true five-toed horse? "

" I don't know."

"It seems to me," said his uncle, "that you'd better come along with me and try to find out. I don't know, either."

Perry almost jumped from his chair.

"Oh, Uncle George," he said, "you're going off on another expedition!"

"Yes."

"Where?"

"Wyoming."

"And am I going?"

"That's for your father to say. I'd like to have you along."

The lad looked appealingly to the old merchant at the head of the table. The latter caught his son's look and smiled.

"I think we'll have to let the boy go with you, George," he said, "if it's only to give us a rest. I pledge you my word that there's been so much paleontology talked in this house ever since Perry came back from that Egyptian trip, that half the time, when a bird comes on the table at dinner time, I hardly know whether I'm carving a modern chicken or an Archaeopteryx."

The scientist smiled broadly.

"In that case," he said, "you'd better let him come with me."

"Oh, Father," cried Perry, "can't I go?"

The boy's mother began some protest from the other end of the table, but the old merchant paid no heed.

"Yes," he answered thoughtfully, "I don't see any reason why you shouldn't go."

Perry wriggled in his chair with eagerness.

"Uncle George," he began excitedly, "when are we going to start? And just whereabouts in Wyoming are we going? And what are we going to look for? And—"

The professor put up his hand in protest.

"Easy, easy there, Perry," he said. "I've a lively remembrance of what you're like when you start asking questions. Spare me now. I'll take a walk with you after dinner and you can spring anything that you want to know, then."

Accordingly, as soon as the meal came to an end—and Perry had never thought a dinner could seem so long and slow, he handed his uncle his hat and the big ironwood stick that the professor always carried, grabbed his own cap and half-pushed him out of the door.

"Now, Uncle George," he said. "Please, quick, tell me all about it! When are we going to start?"

The professor took out his watch with an assumption of intense hurry and consulted it.

" The last Eohippus sank quietly to sleep about two and a quarter million years ago," he said, " and somehow I seem to think that he'll stay there and wait for us a little while longer. But of course, if you're in such a tremendous rush—"

" Please don't joke, Uncle George, I really want to know when we're going to start. I'd like to make those corrections on that Pteranodon that you told me about before I go, any way."

" You can probably do that," the scientist replied. " I had planned to start for the west in a couple of weeks."

" Whereabouts? "

" I want to correlate some horizons," was the reply.

The boy looked puzzled.

" You don't see what I mean? " the professor asked.

" I don't, quite," the lad replied.

" Well, Perry, I want to visit three or four points in Wyoming where different strata of rock are exposed, working from the Upper Eocene downwards. You remember, at the Fayum, there were rocks belonging to the Oligocene Period right up at the top of the cliff, Upper Eocene on the next layer, Middle Eocene where we had our camp, and Lower Eocene down near that Birket-el-Qurun lake? "

" You bet I remember," said Perry, " why, Uncle George, just for fun I made myself a model of it."

" Good thing to do, it'll help you to remember. Now, in the States we haven't any one place where all these various strata show up clearly one above the other, with great ledges exposed for exploration and working, as they are in the Fayum. But, all over Wyoming, in different valleys and at different parts of the Bad Lands, there are these same strata exposed for miles and miles. At one place, Perry, such as the Washakie formation, where I'm going first, all the rocks deposited since the time of the Upper Eocene Period, have been washed or weathered away, so that the Upper Eocene layers are exposed. It's a Bad Land country, too, where the rocks are soft, where there is no fertile soil and no steady rainfall. So, when the cloudbursts come, the rain eats easily into the soft rocks and carries them into buttes and ravines. The sand-bearing winds cut them away still further, so there are hundreds of thousands of square feet exposed to the weather and erosion is always going on."

"Gee, what a chance!" cried Perry. "Why, you could go over a country like that every year and find something."

"You can travel over it after every rainstorm or windstorm, for that matter. Then, after I've spent a day or two at the Washakie, I'm going to the Bridger Bad Lands. They've been cut down a little further, so that all the Upper Eocene has been eroded and the Middle Eocene is exposed. So you see, Perry, in the Washakie formation we have a chance of finding the fossils of animals that lived in the Upper Eocene Period; and, a few miles away, in the Bridger Bad Lands, we can find the fossils of half a million years earlier. Then, in the Wasatch, there are two places I'm going to visit, the Wind River Valley and the Gray Bull River country; the Wind River exposes the top of the Lower Eocene Rocks and the Gray Bull the bottom layers. Then, if I can get time, I'll go to New Mexico, where there has been more erosion and the rocks are cut away down to the Basal Eocene, and, after that, I plan to come back to Wyoming for the famous Laramie formation, which is cut down to the Cretaceous

Period, or the Age of Chalk, and which has been our great hunting ground for the Dinosaurs."

"My Pteranodon was from the Age of Chalk."

"Certainly, Perry, but it was from a marine formation, earlier than the Laramie. You see the Cretaceous Ocean covered Kansas, but did not cover Wyoming. I want to make an exact map of the relations of these strata to each other so as to show clearly the way in which the rocks were laid down and to give a continuous picture of the life of the animals that lived during those times. You know well, Perry, that I'm always more interested in fossils for the sake of the ideas of primitive life that they give, than for fossils themselves."

"Same here," said the boy. "And where are we going to strike first, Uncle George? You said the Washakie formation. Whereabouts, at Haystack Mountain?"

Again the scientist looked approvingly at his nephew.

"You're really doing quite well, Perry," he said. "What made you think of Haystack Mountain?"

"I've been interested in Eocene deposits ever since that Fayum trip," the boy replied, "and I found out that Haystack Mountain was the same age as the beds we worked in Egypt, where I found the Moeritherium. That's sort of made me feel that Eocene fossils were my particular end."

"Do you expect to find another Moeritherium in Wyoming?"

"No, of course not. The Moeritherium isn't found anywhere except in Africa. You said so."

"Are the elephants found anywhere else?"

"Oh, sure. They went everywhere."

"Why didn't the Moeritherium go everywhere?"

"Because—because; oh, I suppose, Africa wasn't connected by land with Europe or Asia. Yes, that's right. Africa was an island in the Eocene Period."

"How about Zeuglodons, then? Would you find them in Haystack Mountain? The fact that Africa was an island wouldn't matter to primitive whales."

Perry rubbed his forehead in perplexity.

"I've a feeling," he said slowly, "that there aren't any there, but why?" He thought for a moment, then catching sight of a twinkle in his uncle's eye, a sudden thought struck him. "Why, of course not," he said, laughing at himself, "that's inland. We've got Zeuglodons in the marine Eocene deposits in Florida."

"I was wondering," his uncle said, "if you were going to have whales walking all over the land. I just wanted to remind you that you've got to think of the conditions of the deposit as well as the age. One other thing, Perry. If, during the Eocene Period, Africa was an island, do you suppose America was connected with Europe and Asia or not?"

"N—no," answered Perry doubtfully. "I think probably not. If it was a time when the land was depressed in Africa, it probably was depressed here."

"Then if Africa had her own types of animals, like the Moeritherium, that we didn't have, you might expect us to have some types that Africa and Europe and Asia didn't have."

"Like the giraffe-camels?"

"Exactly," the professor agreed, "like the giraffe-camels. But in later deposits, the types mixed. Now, Perry, if you think you really want to come with me, you can either join me in three weeks at the Museum Camp near Haystack Butte, or you can join me a few days earlier and go with me to the Loup River formation in Nebraska.

It's on the way, and the Museum received a letter the other day from a ranchman, who seems to have found a fine specimen of the Columbian mammoth. They want me to go and look it over. I thought you might like to see a mammoth embedded. As I understand, this chap has had the sense to leave the skeleton untouched, so it may be in good shape."

"I'd awfully like to go there," said the boy, "but I do think I ought to finish up the Pteranodon first, and it'll take me all of two weeks. I'll join you out at Haystack Butte, if I may. I'd like to go with you to see that mammoth, though, 'cause I've never seen one really in the ground. And just what sort of a beast was the Columbian Mammoth, Uncle George? I've never got clearly in my head the differences between a mastodon and a mammoth."

"It's a thing you ought to know," his uncle said, "particularly as you found the Moeritherium for us. You remember the Paleo-mastodon skull that Antoine found the night before you made your discovery, don't you?"

"Of course!"

"And you remember that while the Moeritherium skull was found in an Upper Eocene bed, the Paleo-mastodon skull was found in a lower Oligocene."

"Of course."

"And you just now told me that Africa was an island during the Eocene period and that it gradually rose, making land bridges across the Mediterranean during the later Oligocene."

"Yes," Perry agreed.

"Very good. Then, when the land bridges were made, and the mammals from Africa first had the chance to make their way into Europe and Asia and so on to America, the ancestors of the elephants were a little more advanced than Paleo-mastodon. That's clear?"

"Quite."

"And so you might find the descendants of Paleo-mastodon in Europe in the Miocene Period, after the land bridges were made, but not earlier."

"Yes, I see."

"That's exactly what happened. In the Lower Miocene of Europe is found the Trilophodon or four-tusked Mastodon. The European form is older and less developed than the four-tusked Mastodon of America, but the little fellow traveled from Africa to China, going through Arabia, and from Africa to Florida by way of the Behring

Straits land bridges. They weren't straits, then, of course.

" So, in that warm corner of Africa, the elephants slowly began to develop until the time of Paleo-mastodon and later, going on their own way without any interference from others. They managed to defend themselves from the creodonts and, little by little, developed trunks and tusks. Then came the land opening into Europe and Asia, and, like a stream bursting through a dam, the four-tusked Mastodons scattered to the four corners of the earth, trumpeting as they went.

" They grew more and more powerful. Soon the little four-tusked fellow decided to give all his attention to the development of his upper tusks and to let the lower ones go. One type, which we call the Beaked Mastodon, had a short jaw and his lower tusks turned down. It wasn't a very good arrangement and his kind became extinct. The other two types are distinguished by a difference in the teeth—"

" Teeth again! " exclaimed Perry.

" Exactly. One had four crests on the second molar, the other had three, but it was the three-crested type that had the first success and the three-crested style that led to the modern Mastodon. The first big Tertiary two-tusked Mastodon, who is called Dibelodon, had the three-crested tooth, and he spread everywhere. All the South American Mastodons were of his race.

"Meantime, another of the family decided to develop the lower tusks, instead of the upper, and they stuck downwards at right angles to the lower jaw. If you can imagine an exaggerated walrus tusk effect, only coming from the lower jaw, instead of from the upper, you can get some idea of it."

"What a queer-looking brute! What would be the use of tusks like that?"

"For roots," his uncle replied. "It worked fairly well, for the family succeeded for a long time, too. The biggest specimen of Dinotherium, which was found in Roumania, was bigger than the largest Mastodon. But the Dinothere didn't have the real emigration spirit. So far as we know, he never came to the New World.

"At last came the true American Mastodon, developed from the three-crested tooth type. He lived during the Age of Man. Primitive Man hunted the Mastodon and the Mammoth, and has even left pictures of the chase engraved on reindeer horn. When you stop to consider the crude types of stone weapons that Man used at that time, it looks like long odds against the Man. Yet the Mastodons have all gone from the earth and Man remains."

"There were living Mastodons not so long ago, weren't there, Uncle George?"

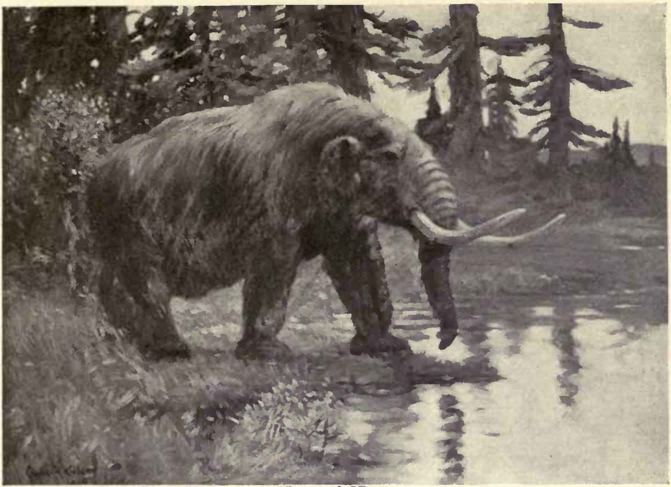
"Quite recently," the professor answered, "but the stories you hear about Mastodons having been seen within historic times are untrue. Still, their skeletons are never deeply buried. They are generally found in bogs and swamps. A great many have been found in New York State and their fossil remains are plentiful all over the Middle West. You know that big swamp about twenty miles south of here?"

"You mean Jackson's Bog?"

"Yes."

"Sure. I've often gone after wild duck, there."

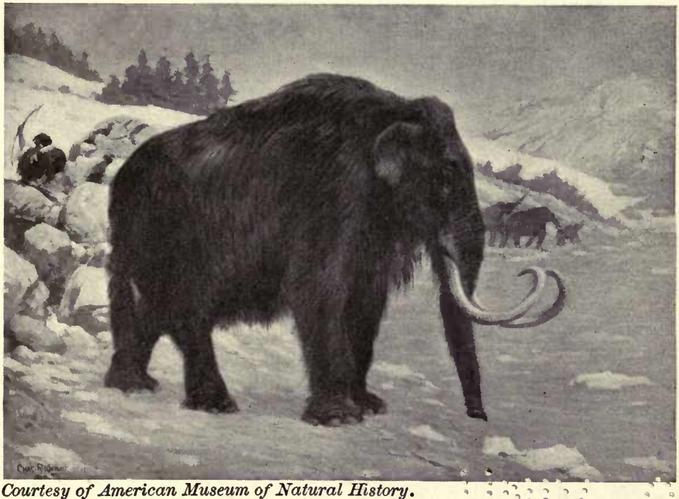
"I wouldn't be at all surprised if there were Mastodons in that swamp. I don't mean for shooting purposes," and the professor laughed, "but buried there. Some of these days, if the swamp is drained, possibly many Mastodon skulls and tusks will be found. The animals swarmed all over this part of America. One skeleton, even,



Courtesy of American Museum of Natural History.

THE AMERICAN MASTODON.

The ancestor of the modern elephants; note the extreme heaviness of body and the sloping head. The mastodon was heavier than the modern elephant, though not as tall.



Courtesy of American Museum of Natural History.

THE SIBERIAN MAMMOTH.

A near relative of the Indian elephant, and like the mastodon, a contemporary of Primitive Man. Note the greater height due to length of limb, the thicker and coarser hair, and the straighter shape of skull; the tusk formation, also, is characteristic, and longer than in modern elephants.

which was found in New York State, was so well preserved that masses of golden-brown hair were found still attached to the withered skin."

The boy looked eagerly to the southward over the countryside.

"You'd like to go and start digging in Jackson's Bog right now, wouldn't you?" his uncle asked.

"Yes," Perry answered with a laugh, "I would. I never thought that there might be a Mastodon so near home."

"You don't have to get far away from home to do fossil hunting," his uncle reminded him. "I remember once I was talking to a group of young fellows in New York, bright working lads, and one of them said to me:

"'Oh, Professor, if only those Wyoming-Texas places you talk about weren't so far away! I'd mighty well like to do something like fossil-hunting on Sunday afternoons and holidays, but there isn't any chance.'

"'Nonsense,' I said to him, 'there are the Palisades, right across the river from your home. You can get there for a nickel and a half an hour's ride. I miss my guess if that isn't a good fossil-hunting ground.'

" Less than a month after that, Perry, the famous skeleton of a Phytosaurus was taken out of those very rocks."

" By one of those chaps? "

" By a group of Columbia College boys," was the reply. " They were interested in geology and had gone over there one Saturday to do a little field work ' on their own.' Getting hungry, they sat down on a flat rock to eat lunch, and while lunching, one of them noticed some brownish stain on the rock. Half idly, he said:

" ' This looks like a vertebra!'

" One of the others laughed, but the third, examining the stains, suggested:

" ' It might be bone, at that. Let's take a bit home and find out! '

" But when they tried to chip it out they found the bone as hard as the rock. Still, they got a small piece and tested it in the laboratory for phosphate, because they knew that if the sample were rich in phosphate it must have come from some living thing. Sure enough, they found phosphate and decided it was bone. They telephoned to the Museum, and as soon as our men went to the find, we recognized at once that it was part of a skeleton. We chiseled away the rock and found what became known as the ‘ Fort Lee Reptile.’ ”

“ And it was a Phytosaurus?” the boy asked. “ What does a Phytosaur look like? ”

“ There were a lot of different Phytosaurs, Perry, but most of them resembled crocodiles, though more lizard-like than a modern crocodile. The Fort Lee specimen was christened *Rutiodon Manhattanensis,* and it’s the only one of that kind ever found.”

“ Wasn’t that great for those college chaps! ” exclaimed Perry.

“ Any one, trained or untrained, can find fossils,” the scientist reminded him. “ I tell you, Perry, there’s not a corner of the United States from which a fellow couldn’t drive to a fossil-bearing locality, and not many places where a fellow couldn’t reach fossils in a day’s walk.”

“ You mean big beasts like the giant reptiles? ”

“ Not only those, of course. No. I’m speaking about fossils of all ages. For example, the Fort Lee Reptile was of the Triassic Period, Perry, so you see he belongs to a long time ago.

“ In some places, the rock deposits are marine, and one might find fossil fishes. Some rocks were deposited near great forests and one might only find fossil leaves and ferns, with, perhaps, primitive insects something like dragon-flies, called *Meganeura,* a foot and a half long. In many places the rocks hold sea creatures from five to fifteen million years old. If every youngster in the United States would look around for fossils when he got the chance, we'd probably find more new species in a year than we find now in ten years.

"I wish I had the opportunity that schoolteachers have in country schools! There isn't a little red schoolhouse in all the country that couldn't have a splendid local museum, if only the boys would get together."

"I'll get a gang together just as soon as I get back," cried Perry.

"Do that," said the professor, "tramp the banks of streams and railroad cuttings, everywhere that the soil has been cut away. First thing you know, you'll drop on some rare prize that science might never have heard of otherwise."

"All right, Uncle George," said the lad, "I'll remember that and I'll see if I can't get a Mastodon for our little museum out of Jackson's Swamp. How about a Mammoth? Could I get one there, too?"

"Not so likely," was the scientist's answer. "The Mammoth only came south with the ice sheet. He was distinctly a winter-loving beast. That's why we have better fossils of the Mammoth than of any creature. Explorers have found him mummied and almost whole, the entire carcass frozen stiff and preserved with the hide and flesh. Two complete specimens were found in Siberia and only a few years ago (1908) one of our museum men secured the larger part of a carcass, with hide and hair, from the edge of the frozen tundra in Alaska."

"What's the difference between Mammoths and Mastodons?"

"Teeth," was the succinct reply. "The Mastodons had chopping teeth, the Mammoths had grinding teeth. You can tell them apart at once. The tusks of the Mastodon were more often straight, those of the Mammoth frequently curved inward."

"Which was the bigger?"

"The biggest of the Mastodons was heavier than the biggest of the Mammoths, but more stockily built. The Mammoth was taller. The most imposing of them all was the Imperial Mammoth of North America, thirteen feet six inches at the shoulder, with huge incurving tusks. But if it came to fighting, I would place my faith on the American Mastodon."

"A scrap between those two would be worth watching," cried Perry, his eyes sparkling.

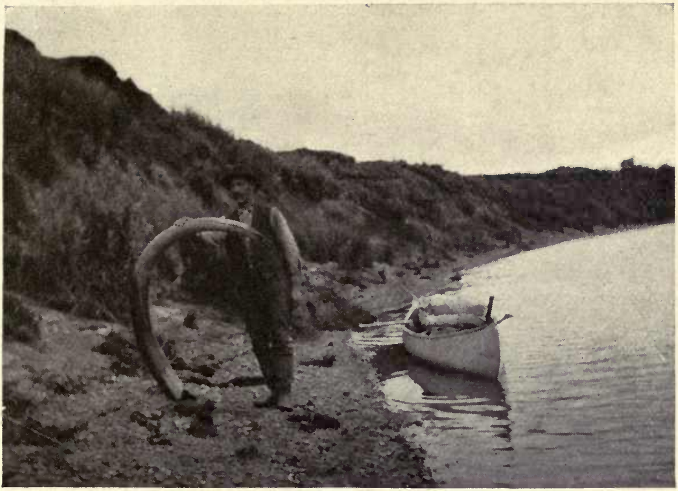
"They wouldn't be likely to meet," said his uncle; "one lived in the north on the frozen plains, the other preferred warmer climates and forested lands."

"Talking of fighting, I was in the Museum the other day," said Perry, "when a terrific thunderstorm came up, and it got almost as dark in there as if it were night. A terrific flash of lightning came, and in the blaze, I had a sudden start, as though one of the skeletons had moved. The crash of thunder that followed seemed like a thousand beasts roaring all together. And I had a quick feeling of wonder as to what would happen if all those monsters should suddenly become alive and start ructions with each other."

"It would be exciting, certainly," said the professor.

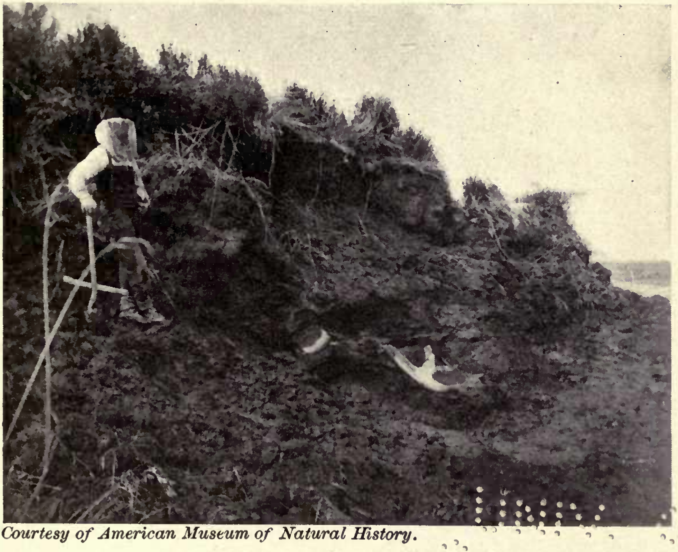
"I'd want my camera," rejoined Perry eagerly.

"Would you?" said the professor. "I'd run!"



Courtesy of American Museum of Natural History.

The Mammoth Tusk He Found.



Courtesy of American Museum of Natural History.

Uncovering a Frozen Mammoth.

Scene on Museum expedition to Alaska, where, near Eschscholtz Bay, a carcass was found, with some skin, masses of hair and wool, and of flesh and fat preserved. Note heavy mosquito veil worn by excavator.

CHAPTER X

THE THREE-TOED HORSE

" WHICH it's none o' my funeral," said a voice over Antoine's shoulder, as he stood on the platform of a small station in Wyoming, waiting for Perry's arrival, " an' if you turns me down cold, I won't shoot none, but what in thunder do you want with a buck-eyed, fly-eaten pinto like that? "

" To ride him," said Antoine, laconically.

The cow-puncher snorted.

" Ride him! Why, pard, I've seen horned toads that could wiggle their legs a tarnation sight faster, an' any self-respectin' Gila Monster c'd beat him at a beauty show. Which I ain't criticizin' none, you understand, I'm just expressin' my feelin's."

Antoine looked quietly at the broncho beside which the cowboy was standing.

" I would not enter yours at a beauty show," he retorted.

" An' I s'pose you'd be ekally scornful about him in a race? You might like to make a little bet on it? "

"No, no," Antoine replied. "I would not bet against him in a race. He would run too well."

"What makes you opine he can run?"

"I know he can run," the young paleontologist answered. "He must run. A horse with a pelvis placed as high as that, small body well tucked in, and those long, sloping pasterns must be a racer. There is Arabian blood in that horse."

The cowboy deftly rolled a cigarette with one hand and eyed the speaker with considerable respect.

"This is pre-cisely the nine-millionth time I've acted like a locoed mule," he admitted with candor. "I had you all doped out as tenderfoot, an' when it comes to pony talk, you're holdin' a straight flush against my pair o' deuces."

"Yes, yes, I am a tenderfoot, as you call it," admitted Antoine, "that is, I have never been in this part of the country before."

"Then how, in the name of a pea-green, six-toothed rattle-snake, did you get the inside rail on this little bronc' o' mine?"

"That is quite easy," the young paleontologist answered. "One of the things that I know is the bones of a horse. You can tell a plow horse from a cow-pony?"

"They don't make any liquor with kick enough in it to make me that blind," was the reply.

"Yet the only difference is that the bones of one are heavier than those of the other," Antoine remarked. "My eye is more trained to small differences than yours, that is all. You know horses?"

"In straight cow-country fashion, I ain't no slouch," the range-rider declared. "I c'n pick the best pony out of a jammed corral quicker'n a scared jack-rabbit c'n make three jumps."

"How do you tell?"

The other thought for a moment.

"I jest takes a look at 'em an' knows right off," he answered. "A real cow-pony shapes up right."

"But the shape is merely muscle and skin over the bones," the other reminded him. "Suppose the skeletons of half a dozen horses were all mixed up in a heap, you couldn't put them together?"

"I pass," was the reply. "Which I've never made what you might call a side-partner of a skeleton."

The paleontologist smiled.

"I have," he said. "I have spent many years with skeletons as my best friends. It is my 'game,' as you call it."

"How's that?"

"You round up the cattle that are alive, I round up the animals that are dead, that have been dead millions of years. I dig them out of the rocks where they are buried."

"Oh, I sagatiate!" the cowboy exclaimed, nodding his head comprehendingly, "you're a bone-hunter! There's a bunch of 'em out the other side of Blue Goose Gully."

"Yes, yes," the young scientist answered, "I'm one of that 'bunch.'"

"Now I've got your brand," the range-rider declared, with satisfaction. "You don't hold nothin' against me, pard, for not bein' wise?"

"No, no, of course not," Antoine retorted, "why should I?"

"Havin' made myself look like a tumble-weed for sense," said the other, with an air of self-disgust, "I got to get square. But I opine I c'n break even with you, after all."

"How's that?"

The cowboy lighted a cigarette from the ashes of his former one, and began:

"'Bout a couple o' weeks ago, when I was ridin' down a maverick heifer that wanted to take a bite out o' the horizon, I turned the corner of a draw, an' right over my head was the skull o' some kind of critter, skull an' a hoof. Which I ain't superstitious none, but it did look like that ornery critter was walkin' out o' the rock to chase me, same as I was chasin the heifer."

Antoine turned eagerly, but the rumble of the incoming train drowned his answer, and, a moment later, Perry jumped out, all enthusiasm and excitement. He rushed up to his friend.

"You here, Antoine! Oh, bully! The professor hadn't told me that you were one of the party!"

Antoine replied with equally cordial greetings, for the two had remained good friends ever since the Fayum trip and had corresponded occasionally. Then the young paleontologist, turning to his new-made cowboy acquaintance, said as an introduction:

"Meet another 'bone-hunter,' won't you? This is Perry Hunt."

"Put it there!" said the Westerner, reaching out his hand. "'Round-up Dick,' they call me on the range."

"Fine," said the boy, shaking hands heartily.

"I've always wanted to know a real cowboy. You are one, aren't you?"

The lad's interest was so genuine and so thoroughly boyish that the range-rider smiled broadly. He seldom smiled, but his weather-beaten face brightened marvelously when he did so.

"I've punched cattle since I was a shaver seven years old," Round-up Dick answered, "an' I'm hopin' to wear spurs as long as there's a township o' range without barbed wire."

"When your train came in, Perry," put in Antoine, eager not to lose the chance of learning more about a possible fossil find, "I was just hearing about a bone outcrop."

He turned to the range-rider.

"Won't you tell me some more about that?" he asked.

"I was remarkin'," the cow-puncher repeated, "that up to the head o' No Wood Draw, as I was eatin' dust to try an' head off a maverick heifer that was headed for China, I run across a critter that looked as if it had been buried in the rock an' was just workin' its way out. It was standin' straight up like as it was alive. I c'd nigh have touched the hoof with my hands as I rode by."

"How big?" the boy queried eagerly.

The Westerner looked at the boy's enthusiastic face and repeated his slow smile.

"The mere idee gits you all worked up, son, doesn't it?" he said. "You looks like Hard Mouth Bill when he first prospects a faro lay-out after a couple o' months on the range. How big, you asks? 'Bout as big as a yearling."

"What did it look like?"

"Looked same as any bones would. Hold up your cards a minute!" The speaker knitted his brows in perplexity. "Which I'm seemin' to remember I did see three toes."

"Size of a yearling! Three toes!"

The lad turned to his comrade in wild excitement.

"Oh, Antoine," he said, "that must be a Mesohippus, the three-toed horse!"

The cowboy listened in astonishment.

"Say them words over slow," put in Round-up Dick. "Did you remark a three-toed horse—a bronc' with three hoofs on each foot?"

"Sure," said Perry, "why not? There are horses with four toes, too."

"Which I've got a pressin' appointment at another part o' the range," said Round-up Dick, "an' my pardner'll be madder'n a Greaser cheated out of a cock-fight if I don't adorn the landscape in his vicinity, but I'm tellin' you right now that if there's any chance o' that critter bein' a three-toed horse, I'll point this bronc's head for that spot an' heat up that trail like it was bein' fried. Will you ride?"

"Yes, yes," said Antoine. "But, Mr. Roundup Dick, it may not be a three-toed horse, it may be a rhinoceros."

The cowboy looked at him for a moment, first with a puzzled air, and then with disgust.

"Now I got the drop on the fact that you're playin' me along," he said sourly, rolling another cigarette. "You c'n call it a nine-legged giraffe, if you like. For a minute there I thought you was playin' with a straight deck."

The Belgian looked puzzled at the phrase, but Perry burst out indignantly:

"We are playing with a straight deck, Dick," he said. "There was a rhinoceros about the size of a big ram, and it had three toes, like all rhinoceroses have, and there were hundreds of them on the plains a million years ago."

The cowboy looked at him shrewdly.

"You sound some like a Sioux medicine man after a dose o' fire-water," he said, " but I've got a trustin' nature, an' maybe I'll play the hand out after all. You're willin' to swear that there was a critter o' that kind? "

" Word of honor," said the boy.

" I'm satisfied," the other replied, " I'm always willin' to gamble an' I push in my stack o' chips. If that critter I saw is what you're romancin' about, I'll lay one over on old Doc Gumshoe so heavy that he won't ever have the nerve to talk again. I'll make him look like a paralyzed stingin' lizard. A rhino a million years old! Gents, let us amble forth! "

And, putting one toe in the stirrup, Round-up Dick floated into the saddle, while the broncho began to pirouette on his hind legs.

" We'd better follow him while he is in the mood to guide us," said Antoine hurriedly to the boy. " Here's your pony, Perry. I'll tell the station agent to look after your baggage till we get back."

Perry swung into the saddle and loped up beside the cowboy, whose pony was dancing around while Round-up Dick sat quite unconcerned.

" You're sure a rider, Dick," the lad said admiringly. " I wish I could sit a bucking horse like that! "

"This is no buckin'," the other answered, "it's jest a little playfulness. No graveyard plug for mine, thanks. Where's your side-partner?"

"Coming right now," answered Perry, as Antoine came round the end of the depot at a smart pace.

Round-up Dick gave a whoop, loosed his reins, and the broncho broke into a full run. The other two horses followed, and Perry, wild with delight, found that the queer-looking pinto that Antoine had brought for him was well able to keep up with the others. If anything, it was a trifle faster than his comrade's mount, though the cowboy's mare undoubtedly had the better stride. After a few minutes of the swift pace, the town was out of sight, and Round-up Dick pulled his pony down to a loping gait.

"You said a million years?" he queried.

"Three million would be nearer the mark," the lad replied.

"You chuck millions o' years around like a sport would chuck dimes to a bunch o' Greaser kiddies," he remarked. "Jest drive a shaft into this thick skull o' mine an' show me how you c'n tell about three-toed horses an' the rest o' the layout."

Perry looked at Antoine, but the young paleontologist replied, in answer to the look:

"You tell him, Perry, you can make it plainer than I can."

The boy pulled his ear meditatively.

"All right, Antoine," he said, "I'll do my best."

He turned to the range-rider, and began to explain how the rocks were made, either by deposits under the sea, or by the mud carried down by rivers, or at the bottoms of lakes, or by dust carried in large quantities by the wind, or by ashes from volcanic eruptions. He showed that different kinds of animals lived at various ages, and since they all had to die, the skeleton of one kind would be found in one layer of rock, of another, in a different formation.

"Look here, Dick," he continued, thinking out some way to make the idea clear, "suppose for a minute that you were a carver, whittling toy animals out of wood. We'll suppose that the thing you like to carve best is a horse."

"Happens that I do whittle," said the cowboy, "an' you hit the bull's-eye first time—what I like best to whittle is ponies."

"Good," said Perry, feeling that his illustration would carry successfully. " My next ' supposing ' won't be as easy."

" Shoot! "

" Supposing you lived to be a thousand years old."

" Don't expect to," said Round-up Dick; " still, I c'n pipe-dream as good as the next man. All right, I'm goin' to live a thousand years. I'm to be whittlin' steady all the time? "

" All the time," said the boy.

" I'd be neck-deep in shavin's," said the rider.

" Fine," said Perry, " that was just the idea I wanted you to get. Now, we'll suppose that when you started whittling you had a jack-knife, a good one, of course, sharp and all that sort of thing, but still a jack-knife. And we'll suppose that the only kind of wood you could get hold of was pine."

" Pine an' a jack-knife," agreed the cowboy. " I've got your trail so far."

" You whittled these horses out of pine with a jack-knife for two hundred years straight ahead," suggested Perry, " and any one of them that you didn't think good enough you chucked on the floor, where it soon got buried by the shavings that came showering down. Don't forget, Dick, you're working like a son of a gun all this time."

"Don't I ever get a day off for a bust-up?" queried Dick.

"Never," the boy replied.

"Say, pard," the range-rider protested, "don't ride a good horse to death, even in a pipe-dream!"

Perry laughed and continued:

"After you had whittled straight ahead for two hundred years, you'd have a pile of shavings. The only way that you could handle them would be to stamp them down, every once a while, and, if the roof leaked, the shavings would get wet when it rained and cake down on the floor pretty solidly. Maybe, after a couple of hundred years, you'd get a solid layer of trampled shavings and dust about a foot thick. And scattered through this layer would be all the poor carvings that you hadn't thought worth saving. You get that idea all right?"

"Pat hand," agreed the cowboy. "Go ahead."

"Then at the end of the two hundred years, a chap comes along and looks at your work. He thinks it's fine, but tells you that pine is so soft and the grain is so big that you can't carve the horses as delicately as you'd like. He shows you how oak would be a heap better. So you get hold of some oak and start whittling with oak."

"For another two hundred years?"

"Yes," agreed Perry. "Because the wood is harder and your knife is getting blunt—"

"Lead me to a knife that'll whittle steady for two hundred years! Why, Bub, it would have to be a diamond! But I forgot, we were just 'supposin'.'"

"An' while you're doing the best you can with that blunt knife," the lad went on, "a fellow comes along and tells you that you'll do a lot better if you use a chisel instead of a jack-knife. So you buy a chisel from this chap, and go ahead with your work. Now the chips from the chisel are going to be a little different from the shavings you made with the jack-knife, but they'll be oak shavings still. Then, too, Dick, the oak being so much harder than the pine, you'll only have half as many shavings, so it'll take all of the four hundred years, two hundred with the jack-knife and two hundred with the chisel, to make another trampled-down layer of shavings a foot thick."

"I see how you're headin'," said the cowboy, nodding wisely, "an' in the lower six inches o' that oak stuff will be animals I whittled with the knife, and in the top half, the ones I worked out with the chisel. Is that the idee?"

"To a hair!" exclaimed Perry. "By now you're making corking good carvings—"

"I'd be a looney if I didn't, after six-hundred-years' tryin'," the cowboy interrupted.

"And then along comes another man."

"Busy trail that," Round-up Dick put in, who was obviously enjoying the tale thoroughly, "that's three men in six hundred years. Not what you'd call crowded! What brilliant idee did this stranger have?"

"Boxwood," answered the boy, "harder than oak. And for the next two hundred years you worked in boxwood."

He paused.

"An' after that?" queried Round-up Dick.

"Then you take a rest," the boy suggested.

"I thought I had somethin' comin'," the range-rider declared, with mock relief in his voice. "Painted Pinto! Wouldn't I make a town hum after eight hundred years without a blow-out! An' what happens after I'm gone? Another man comes, eh? Don't get reckless with your population, Bub!"

"Not a stranger this time," Perry went on, "but a cyclone."

"Which I'm feelin' grateful you let me get away first."

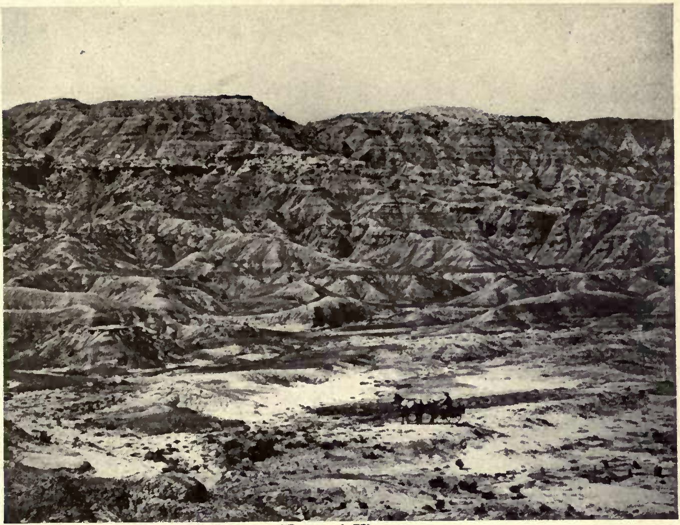
"This is a real cyclone," the boy continued, "and we'll suppose that it tore the shanty in half, cutting it clean across the floor, the way cyclones often do, taking half of it away in a cloud of dust, but leaving half of it as straight cut as though you'd passed a knife through a layer cake."

"And I returns to that scene of desolation?"

"You do," Perry assented. "And there you see the half of the shanty and the floor, which is in three layers, the bottom one of pine shavings, the next one of oak, and the top one of boxwood. Then, since you remember how you used to work, you know that there are pine animals carved with a jack-knife in the bottom layer, oak animals carved with a jack-knife in the lower part of the oak layer, oak animals carved with a chisel in the top part of that layer, and boxwood animals in the top boxwood layer."

Antoine nodded his head approvingly.

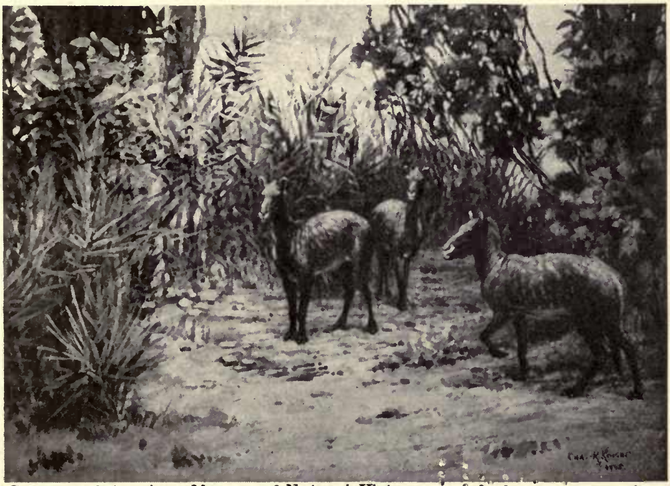
"That is a very good figure," he said, "I think Mr. Round-up Dick can follow that."



Courtesy of American Museum of Natural History.

FINDING THE EOHIPPUS

The Wasatch formation, in the Bad Lands of Wyoming, in which lie skeletons of the Dawn Horse.



Courtesy of American Museum of Natural History.

EOHIPPUS, THE FOUR-TOED HORSE.

The Dawn Horse, the earliest horse so far known, size of a large fox, adapted to low-lying and wooded ground.

"Clear as the barrel of a six-shooter a foot from your nose," agreed the cowboy.

"Now, Dick," Perry went on, "the real thing was a good deal that way. When Nature first started to make a horse, it came out like a four-toed creature not much bigger than a fox. The rocks that Nature was making at that time, which we call Lower Eocene, we can liken to the pine shavings. So you see, wherever you find Lower Eocene rocks you're likely to find skeletons of that little four-toed horse, just the same way as any place in that layer of pine shavings you'd be apt to find the horses whittled out of pine. We call that horse an Eohippus."

"That's a whole lot of handle for a critter no bigger'n a fox!"

"'Hippus' means 'horse,' and 'eo' means 'dawn,'" explained the boy, "so the Eohippus is the Dawn Horse, or the Dawn of the Horse."

The cowboy rolled a cigarette.

"Which I'm admirin' your lay-out a heap," he said, "you've sure got a double cinch-strap on that horse stuff."

"I ought to have," said Perry, "it's what I want to work at, though I haven't had much chance in the field yet. Well," he continued, "after a few hundred thousand years had gone by, Nature improved on the horse. She found she could make a better horse, if he was a little bigger, and that he could run quicker on three toes than on four. So in the next layer of rocks, which we call Oligocene, and which we can liken to the lower layer of the oak shavings, you're apt to find skeletons of that three-toed horse, which is called Mesohippus, same as you'd find a knife-whittled oak horse in the lower layer of oak shavings."

"And 'Meso-hippus' means a 'what-horse'?" queried Round-up Dick, remembering that 'hippus' was a 'horse.'

"A middle-horse," the boy answered, "halfway between the dawn horse and the modern horse."

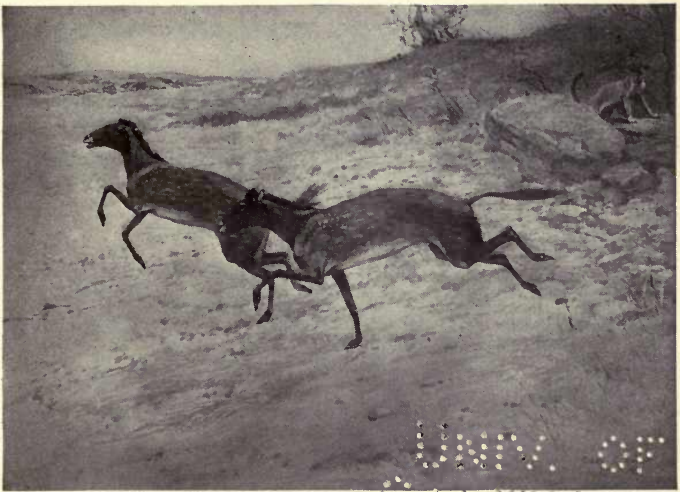
"Deal again," said the cowboy.

"Another few hundred thousand years went by, a different series of rocks came and Nature again improved on the horse. She saw that he would be better if he were still larger, and swifter if only one toe reached the ground. So in the next layer, which corresponds, Dick, with the top part of the layer of oak shavings, we find a horse called the Protohippus. He had three toes, but only one of them touched the ground, the other two hung useless on either side."

Courtesy of American Museum of Natural History.

FINDING THE MESOHIPPUS.

The Oreodon formation, in South Dakota, with the Museum expedition in the foreground.



UNIV. OF

Courtesy of American Museum of Natural History.

MESOHIPPUS, THE THREE-TOED HORSE.

The swifter Middle Horse, the size of a coyote, adapted for hard ground; threateningly watched from a distance by Dinictis, the light-limbed sabre-tooth cat.

The range-rider nodded sagaciously.

"An' what's the face value o' 'Proto-hippus'?" he queried.

Perry puzzled for a moment.

"The 'Before-Horse,' I suppose; it's really almost a true horse."

"An' the boxwood layer is the ponies o' today?"

"No, Dick," said the boy. "The next layer, which the geologists would call Pleistocene, has true horses, with a single hoof, and with the other two toes reduced to small splints of bone that don't appear outside the skin. These are called horses. There were vast herds of them roaming over the plains."

"An' this little bronc," said Round-up Dick, slapping his pony's neck, "has come down from them, eh?"

"No," answered Perry. "All the American horses went out, bang! Why, no one knows."

"Where did we get the broncs, then?"

"From the Spaniards and early colonists of America."

The cowboy looked incredulous.

"How about the Indian mustang?"

"Same thing," asserted Perry.

"Then what did the Indians ride on before the Spaniards came?"

"They didn't ride."

The cowboy turned to Antoine for confirmation, and the young paleontologist nodded in support of Perry's assertion.

"Yes, yes, he is right, Mr. Round-up Dick," he answered. "The Indians did not have horses before the white man came. You will remember that even among the Sioux, all their early means of transport was with a dog travois, two poles dragging along the ground. When the Sioux did get horses, they merely made a longer travois."

"What killed off all the horses?"

"It's a mystery," Perry answered, "no one really knows. We've found fossils of insects like the tse-tse fly—that's the one that causes sleeping-sickness among the cattle in Africa—and maybe there was a plague of these flies which started an epidemic that killed off all the wild horses."

Perry was about to plunge into a talk over the different reasons why some of the older types of animals became extinct, when suddenly, the cowboy gave a whoop and spurred his horse to the gallop. As they were riding down a gully, where the ground was very uneven, the boy was only too glad to pay full attention to his mount. But the cow pony, though going at full speed, picked his way perfectly. In full career, Round-up Dick swerved round the corner of a cliff and stopped dead. Perry had just time to brace himself against being thrown over his pony's head, when the cowboy, pointing with his finger, said:

"Give it a handle!"

Perry looked up.

There, standing out from the cliff as though it were one of the ancient bulls of Assyria, was part of the skull and the foot of an animal, the hoof pointed downwards as though the creature were going to gallop right out of the cliff.

Perry slapped his pony's neck in the exuberence of his delight and had a few moments of unexpected war-dance.

"Antoine! Antoine!" he cried, clinging to the saddle as best he could, "do you see it?"

As the young paleontologist had been looking at the fossil steadily all the time that the lad's pony was prancing around on its hind legs, the question was quite unnecessary, but the boy had to blow off steam.

"It is a Mesohippus!" he cried excitedly, "it is, it is, it is!"

Antoine shook his head..

"It is a Hyrachyus," he said. Then, turning to the cowboy, he continued, "this is the three-toed rhinoceros that I told you about, Mr. Round-up Dick. And," he added, his eyes kindling, "it may be a perfect specimen."

"A Hyrachyus!" chanted the boy. "Gee! What a find!"

The cowboy shifted impatiently in his saddle.

"Let's see the color o' the cards," he said.

Antoine shook his feet free of the stirrups, and with an ease that surprised the boy, raised himself to his feet on the saddle. Standing, the Belgian could just see into the jaw of the skull. He examined the teeth carefully, then looked down at the two eager questioners.

"It is a Hyrachyus," he said, "an early kind of cursorial rhinoceros. That means, Mr. Round-up Dick, that he was a rhinoceros with light legs, so that he could gallop like a horse. If you look at the rock, you can see that once it was mud, probably the bank of a small river. From the position of the skeleton—of course I can see only the skull and foot—the Hyrachyus must have got stuck and was trying to pull his feet out. But he was stuck fast then. That was three million years ago and he is stuck fast still."

The cowboy looked at Antoine with frank admiration.

"An' you c'n spot the brand as quick as that!" he said. "Which I've got to admit that you c'n call the turn on me. What happened to those beasts, since there aren't any of 'em on the range? Flies get them, too?"

"Sabre-tooth cats got them, I guess," said the boy. "Although the Hyrachyus could run some, with his three toes he probably couldn't get away from the swift sabre-tooths. When you think what a rhinoceros is like, Dick, don't you think it was a plucky stunt for them to get out of the swamps and try to make good on the plains? Plucky, but it didn't go. For all we know, that chap up there may have been the very last of his race, and he not only died with his boots on, but died standing up, at that."

"What do you figure on doin' with the bones, now you've got 'em?"

"Cut them out," declared Perry.

"Right out o' the rock?"

"We'll take rock and all," the boy explained. "That whole block of stone has got to be quarried out, even if it weighs a ton. After it has got to the museum workshop in New York, workmen can spend several months carefully chipping away the rock until they get at the bones. It's the hardest kind of work, Dick, and it has to be done by experts. Then, when every littlest bit of the rock has been chiseled away, the bones have to be mounted. We can make complete skeletons when the remains amount to at least two-thirds of the animal."

"Which I don't yet hog-tie the idee how you c'n tell a critter jest by his bones," put in Round-up Dick. "You declares that cayuse in the rock is a rhinoceros the size of a sheep. There isn't nary a hide or a bit o' wool to tell what it looked like. So far as I can see that could ha' been a wolf the size of a sheep or a yearlin' cow the size of a sheep."

"It is easy to tell by the teeth," answered Antoine. "Didn't you see me look at the teeth?"

"I see you was spottin' something."

"Teeth," the young paleontologist answered. "It wouldn't be a wolf, Mr. Round-up Dick, because a wolf eats flesh and his teeth are made sharp for tearing. A horse or a rhinoceros lives on grasses and plants and he has flat teeth to grind his food. You can tell almost any kind of animal at once by one tooth, and if you have all the teeth of the lower jaw, you can tell a great deal about the animal. Suppose that I found a jaw, I could tell by the teeth what food that animal lived on. If I knew what food he ate, I could tell whether he lived on the plains, or in a forest or in a swamp. If he lived on the plains, I would know that he must have been able to run fast; if he was in the forest, that he would be heavy; if in the swamp that he must have been able to swim. You see, if I found a jaw alone, I could give you a good idea of the animal."

The cowboy stared at him in blank astonishment.

" And in this case," Antoine continued, " I can see the feet as well. And the foot tells all about the animal's habits. If I find teeth made to crop grass, and light feet made to run quickly over the grass, I do not have to be very clever to see that such an animal lives on a grassy plain. And if I find that in one part of the world the animal with teeth for eating grass did not develop feet to travel swiftly with, while in another part of the world it did, I do not have to think very hard to see that in the place where the animals did not become swift they had no swift-running enemies, while in the other place they did. So you see, Mr. Round-up Dick, where the grass-cropping animals had feet that did not make them swift, I should not look for swift-running enemies, such as the American sabre-tooth tigers."

"It's all so plumb easy when you talk," said the range-rider, "but I'd ha' fought, bled, an' died among a pile o' bones before I'd ever ha' thought it out."

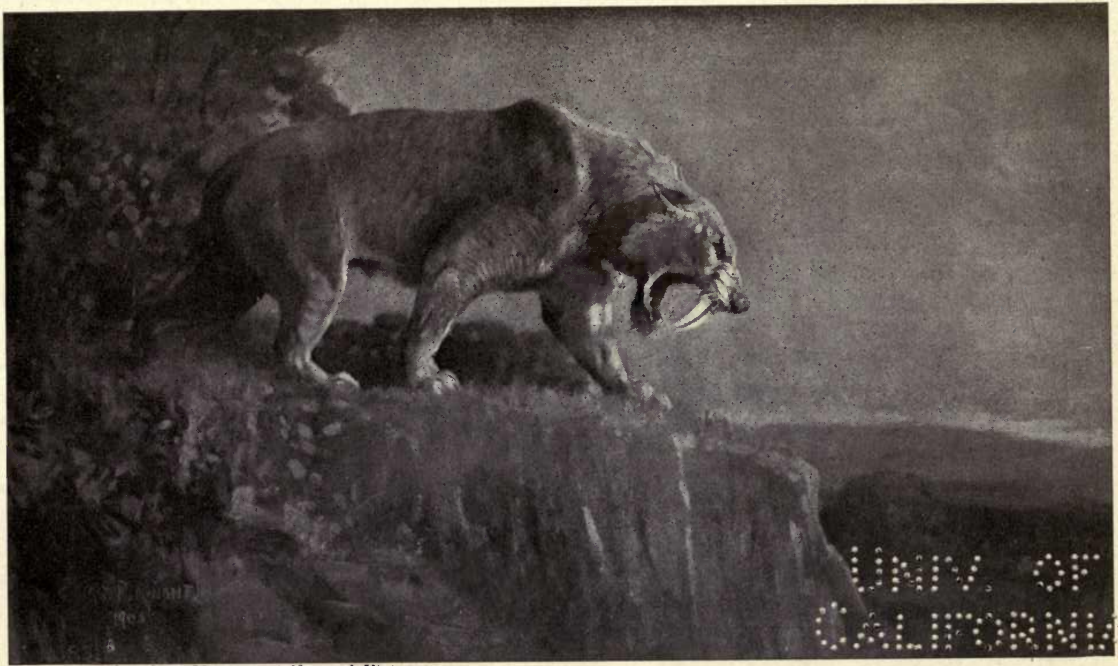
"Have you got pretty good teeth, Dick?" Perry asked.

"I c'n bite nails," the cowboy answered.

"All right," rejoined the boy, opening his mouth and pressing his thumb against his teeth. "Suppose you count them. Begin in the middle. You've got two teeth shaped like chisels, haven't you, and then comes a sharp one, like the long teeth of a dog? And behind they're all fairly flat, eh?"

"You call the turn!"

"Now, Dick, a dog has three chisel-shaped or incisor teeth, while a cow has three in the lower jaw and none in the upper jaw. Then behind that the dogs have jagged or sharp-cutting teeth, while a cow's teeth are all more smooth. If Antoine



UNIV. OF CALIFORNIA

Courtesy of American Museum of Natural History.

SMILODON, THE SABRE-TOOTH TIGER.

One of the most ferocious of the animals against which Primitive Man had to fight his way.

says that's a rhinoceros type, it can't have any sharp-cutting teeth like those of a dog; a rhinoceros doesn't eat flesh, and so he doesn't need flesh-tearing teeth to tear with. A rhinoceros browses, and so his teeth are grinders to mash the vegetation to a pulp."

"That outbids my pile!" the range-rider exclaimed. "Which I've always been able to hand out a pony's age by lookin' at his teeth, but when it comes to followin' a trail a million years old, why, I can't sit in for that game. But as long as you like to talk I'll keep my ears right up, listenin'!"

Antoine looked at his watch.

"If we're going to get to Blue Goose Gully," he said, "I think we'll have to start. I've made notes of my bearings."

"C'n you find the place again?" queried the cowboy.

"Yes, yes, easily," the young paleontologist answered. "It is east-south-east of that peak, north and a half west of that butte, and due east of that rocky spur. I can ride straight to it to-morrow."

"Smooth as a card-sharp with a stacked deck," declared the range-rider. "Which if you're ridin' back, gents, that's my trail, too,'' and without further word, he wheeled his pony and started up the gully.

"Say, Dick,'' said Perry, half an hour later, as the station came in sight in the distance, "it was bully of you to come out here and show us that Hyrachyus.''

The cowboy waved his thanks away with a gesture, but the lad continued:

"I've been wondering, since you've got so interested in that tooth idea, if you wouldn't like one. If you want to spin a yarn you ought to have something to show!''

He put his hand to his tie and drew from it a small scarfpin made from a Zeuglodon tooth; one of those he had picked up in Zeuglodon Valley two years before.

"Here's one,'' he said, "of a whale that lived about three million years ago. Use it for a stickpin!''

"But, pard—'' the cowboy began.

"Never mind about that, go ahead,'' urged the boy. "If you don't want to take it any other way, take it just to remember this ride by. Honestly, I've got lots of them, and you mightn't happen to see one again.''

The lad's new friend protested vigorously, but it was clear that the gift appealed to him, and, just before they reached the station, Perry overcame the last of his objections. The range-rider took the stick-pin and thrust it into the band of his sombrero, taking particular delight in the little patent fastener that Perry also gave him, to prevent the pin from flying out. He flourished the sombrero with a "whoop!" and started his pony on a series of antics that would have done credit to a trick mule.

When Antoine and Perry lost sight of him, the broncho was headed across the plains like a dust-whirl, while the cowboy's cheery "Adios!" rang in their ears.

CHAPTER XI

UNDER THE CLAWS OF A DINOSAUR

"It seems as though my coming had brought good luck," said Perry, joyously, when, all the baggage question settled, he started with Antoine on the trail that led to the camp at Blue Goose Gully.

"Yes, yes, it did," answered his friend. "I should not have come into town unless it had been to meet you, and it just happened that Mr. Round-up Dick was there. We would have been most unlikely to go to No Wood Draw, and if I had not met our cowboy friend that specimen of Hyrachyus might have been lost to science forever."

"I hope I have that same Midas touch everywhere!" the lad rejoined, exultantly.

"Perhaps yes, perhaps no," the other warned him. "If you find specimens too easily, you will be disappointed when the months go by and you discover nothing. I was very lucky on my second day here, but I have not seen a single good specimen for the last two weeks and we are in the heart of the fossil country."

"Cheer up, Antoine, you might drop on one any minute!"

"It is that which makes me so eager for every morning," the young paleontologist replied. "Every day is a new day and is full of promise. And when, each day, I ride out from the camp to a point in the Bad Lands where few people have been, and where no white man has ever walked, picket my horse and start out on foot, all the spell of the explorer comes to me.

"All around is the utter silence and stillness. There is no movement of clouds in the deep blue sky, there is no leaf to rustle, no sound of falling water. The sharply carved rocks, pink, red, green and slate-gray, quiver in the sunlight. There is no sign of a life, except perhaps, a lizard darting to his hole from his basking-place on a hot rock, or the black speck of a buzzard in the sky.

"It is in a world so new and strange as this that I am searching for a world still more new and still more strange. And then, Perry, when, in the evening, the shadows turn all those glowing rocks to a deep purple and I ride home to

see a shadowy figure such as the Indians would have loved, stride across the sky.

" And then, Perry, a brown stain in a rock changes the nature of the dream and the world and the life of three million years ago comes surging across my mind instead. It was when I was thus dreaming on my second day here that I found a wonderfully perfect specimen of the very first dog in America, the Procynodictis. That was worth finding."

" Dogs as early as the Washakie formation!" exclaimed Perry in surprise. " I thought dogs were as new as bears!"

" Not in America," Antoine answered. " The bear is a very late arrival into this country. It is possible that the Cave Man in America was here as early as the Cave Bear, although there were smaller bears in Europe long before. But Procynodictis was almost a direct ancestor of the dog, although, of course, he was a good deal like a cat, too."

" A cat and a dog at the same time," exclaimed Perry, laughing; " that's mixing up the breeds, sure enough."

" There was a regular cat-dog," the other remarked, " and cat-dogs, such as Daphaenus, were very plentiful in America during the Oligocene Period. They had the teeth and jaws of dogs or wolves, but their claws were like those of a cat and could be drawn out and in, or partly, at least."

"How big was the one you found, Antoine?"

"My Procynodictis was just a little larger than a domestic pussy, but with a smaller body, and longer legs. That combination of dogs' teeth and cats' claws should have been very effective, Perry, but I suppose it was too much of a good thing. Anyway, the cat-dogs died out, when the true cats and the true dogs came on the scene."

"It's queer," said Perry thoughtfully, "how that Eocene Period seems to have been a time of mixtures."

"It was a time of mammal branchings," the young paleontologist reminded him, "the time when the types of to-day began to diverge. What two animals look more unlike each other to-day than a cat and an otter? Yet cat-otters, then, were as plentiful as cat-dogs. They were as big as a Hyrachyus, and considerably heavier.

"Patriofelis, who despite his name was not the father of all the cats, since the latter came from a different and smaller branch, must have been a very ugly customer, Perry. There was a good deal of the ruth of tooth and claw in those Eocene times, Perry, and an animal that wanted to escape being eaten had to keep a close lookout. And, since keeping a close lookout is a matter of brains, it is easy to see why those animals which had the least brains were the most easily eaten, and so the race became extinct."

"Yes," agreed Perry, "that's true yet. If you don't use your brains, the other fellow gets ahead of you."

"He doesn't exactly eat you for dinner," said the Belgian, smiling, "but he'll eat your dinner, or eat a dinner at your expense by making you work for him. After all, that's the whole story of development, the quickest, the brainiest animals survived; the heavy, sluggish ones died off. Look at your friend Hyrachyus, the running rhinoceros. He was just a little heavier than the three-toed horse, so Patriofelis caught and ate him when he couldn't catch the Mesohippus."

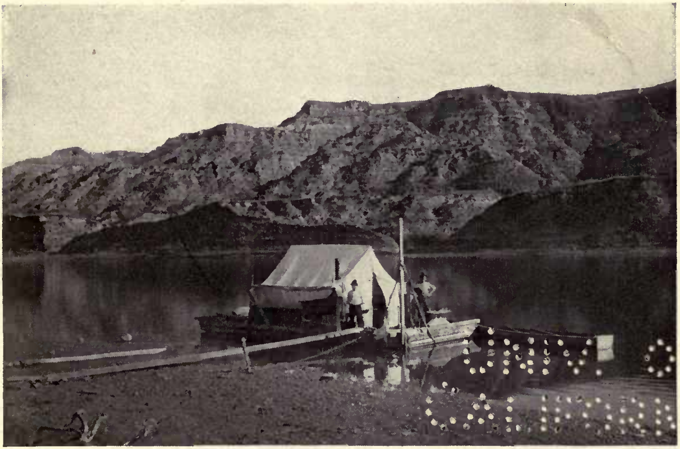
"It's like the story of a battle," the boy replied musingly. "Here's one small beast that eats grass, and another small beast that eats flesh. The carnivore will eat the herbivore if he can catch him. So the whole family of herbivore has to learn to run faster than his enemy. The enemy, accordingly, gets bigger. Or, perhaps, the herbivore gets arms, and the carnivore has to be more powerful, with sharper teeth and claws. And so it goes on, each developing something against the other, until beast of prey or victim becomes so big or so clumsy that he can't develop any further. Then, since neither can ever go backward over the path of progress, either all the grass-eaters get eaten up and their race becomes extinct, or they learn how to escape from the carnivore and that race dies off because it can't catch its dinner."

Antoine nodded his head.

"It is a story of battle," he said, "a battle against other animals or a battle against cold. Look how many beasts have entered into the battle with Man, Perry, and how most of them have lost! The little wild cow was wise, and, as Kipling tells, became Man's Third Friend, and so, to-day, the cow has developed and increased, so that there is hardly a country on the globe where the cow does not live in peace and comfort. But the Buffalo of the Plains gave fight to Man, he put down his horns and shaggy mane and bellowed his defiance. And so, Perry, beneath an

Courtesy of the American Museum of Natural History.

HERD CROSSING RED DEER RIVER, ALBERTA.



Courtesy of American Museum of Natural History.

MUSEUM BOAT CAMP ON RED DEER RIVER.

Canyon where specimens of the gigantic Albertosaurus, Saurolophus, and many other forms of giant reptiles were found.

inch or so of prairie soil lie the bones of hundreds of thousands of buffalo, and a few half-tame herds alone remain of the vast hordes that roamed the plains and gave food and a livelihood to the Indians."

"But that's a case all by itself," the boy replied.

"No," said Antoine, "exactly the same thing happened in Europe. There, the great wild ox, the aurochs—the urus that Cæsar speaks of—a giant bovine six feet high at the shoulder, defied man, certainly until the twelfth century, and probably a few were still alive when Columbus sailed for the New World."

"Are there none left now?"

"Not one," was the reply; "there are few European bison and a few wild cattle of another species, kept in parks in Europe, but the true aurochs is gone for ever."

"I suppose, after a while," said Perry, mournfully, "there won't be any wild animal left for us to hunt. When all the open land is turned into farms and all the forests are cleared and handled for lumber, then all the bears and wolves and mountain lions will be shot, and museums, a thousand years from now, will be as keen for the skeleton of a grizzly bear as we should be to-day for an aurochs."

"Undoubtedly," Antoine answered, "and when Africa is settled, lions and tigers, rhinoceroses and hippopotami will all go. Man has created a new age, Perry, the age of usefulness, and the only chance of survival an animal has to-day is to become a slave to Man. In order to do that, an animal has to have a good enough brain to learn. The primitive types are small-brained and will die.

"Think, Perry, if a rhinoceros could be taught to carry a load, how valuable he would be in the African jungle! But he fights Man instead, and so he must be killed. If a tiger could be trained to guard a flock of sheep, as a collie is trained, and a collie's ancestors were wolf-like, how safe that flock would be! But the tiger cannot be trained, the whole cat tribe is treacherous. It is the big-brained dog, and the big-brained horse, and the big-brained elephant that become the friends and the servants of Man and thus win a new right to live."

"That does seem to make Man the boss."

"Man is the boss," the young paleontologist agreed. "He gives the word to live or die, because his is the ruling brain of the world. Before Man came, every creature that lived was the slave to Nature, but Man is Nature's master. I think the fossils show that," concluded Antoine, as the tents of the Museum camp hove in sight, "for we see the world of the olden time preparing for the coming of Man."

"And will Man, too, become extinct and some other animal take his place?"

"Some races of men have gone already," the other answered. "The pygmies are dying fast, the last of the giant Patagonians died less than a hundred years ago, the last Tasmanian closed his race in 1876, and the flame of the North American Indian is flickering out. The skulls of the men we find in the flint beds of the Ice Age are greatly different from those of any man of to-day. Suppose, Perry, a new Age of Cold should come, all the negroes would die out. If the whole climate of the world grew hotter, so that not even the Temperate Zones were any cooler than the tropics are to-day, the white race would die out and the negro would take its place. In food alone, Man is safe, for he eats both flesh and vegetable food and has brain enough to hunt the one and to cultivate the other."

Perry waited until Antoine had finished the sentence, then, standing on his stirrups, he waved his hat and raised a "Hello!" to his uncle, who was cantering toward the camp from another direction.

"Why, where have you been, you two rovers?" queried the professor, cheerily, as they came within speaking distance. "We expected you at lunch time. I even came into camp for lunch to be there when you arrived."

"We met an awfully jolly cowboy and he took us to a Hyrachyus, Uncle George!" the boy burst out. "Oh, it's a peach, standing up there in a rock just as if it were going to gallop out!"

Antoine was just as excited as the lad, and just as eager to tell the story, but his manner was less exuberant.

"I think it really is a good specimen, Dr. Hunt," he said, "but I'm afraid it will be quite difficult to remove."

"You think the skeleton is complete?"

"Of course," the Belgian answered, "it's impossible to say until the matrix is removed, but I think, from the position of the bones, that the Hyrachyus was mired, and so the complete skeleton is likely to be in place."

"Your discovery is almost an exact duplicate of the manner in which the first known Hyrachyus was found," the scientist remarked, "the famous specimen discovered by Cope. Evidently Hyrachyus seems to have had poor judgment in telling when a place was safe or not. A really good Hyrachyus! Yes, that's worth while. What was the condition of the skull, Antoine?"

The younger paleontologist immediately plunged into an exact description, while Perry marveled at the amount of detailed information his friend had secured during the few moments, when, standing on the saddle, he had made a brief examination of the skull.

As the party cantered into the camp, the professor turned to his nephew and said:

"This find gives you a chance I hadn't expected, Perry. I thought that we would leave here to-morrow, but, of course, you can't imagine my leaving a specimen like that without looking it over! I'll run over to-morrow with Mr. Gainman, the leader of this expedition, and you'll have a chance to do a little riding around yourself, and get the general characteristics of this Washakie formation in your head."

That evening after dinner, under prompting from Perry, Dr. Hunt told of his adventures in Tierra del Fuego and in the interior of Patagonia in a search for a living specimen of the giant ground-sloth, the great Megatherium, a monster twelve feet in height."

"Did you think that there were any giant sloths living still, Uncle George?" the boy asked.

"I hardly thought so," the scientist replied, "but I hadn't sufficient reason to disbelieve the report. All through South America there are legends of the great ground-sloth having been domesticated by Man. And, as you probably know, every once in a little while, there are fantastic stories of Mylodon, twelve feet in length, having been domesticated like cows by Primitive Man."

"You mean that Primitive Man milked the sloth?" exclaimed Perry in amazement.

"So the story runs. But I don't think it can be regarded as true. In the first place, the Patagonians were not very far advanced in civilization; and in the second place, the sloths are notoriously slow in brain, so that they would not be teachable. Of course, one could say that the stupidity of the sloth made them fit for domestication, because they wouldn't know enough to resent slavery."

"Then I should think they would have been preserved instead of dying out."

"Very well reasoned, Perry," said his uncle, nodding his head approvingly. "That is a most important point. If the sloth could have been domesticated like the cow, the Patagonians would have had a better chance of survival, and if the Patagonians could have raised sloths, the sloths would have survived in herds also. No, Perry, I think the South American natives must have been more anxious to kill and eat the sloths than to domesticate them, though it is almost as strange to understand how a few scattered natives, with stone-tipped spears, could have caused the extinction of a race of giant animals that had survived all the changes of several million years. For you remember, Perry, that the ancestors of the ground-sloths, such as Prepotherium, date back as far as the Miocene Period."

"But is there any record of those huge ground-sloths having been found in South America except as fossils?" queried Perry.

"No," the professor replied, "there is not. But that is not a sufficient reason for saying that there never is going to be. Don't forget the okapi! And the reason that I joined that expedition to Patagonia, Perry, was because one of the universities received what seemed like sure and accurate information about a still living ground-sloth. The matter was worth investigating. It might be true."

"Then you think it is possible, still?"

"Quite possible, but unlikely. It is equally possible that there may still be a small herd of mammoth in the unexplored region west of Hudson's Bay, but the reports that are brought in by travelers that they have seen a living mammoth, have never been verified.

"Many scientists believe that there still be a few giant Moas in some of the interior regions of New Zealand, but the most diligent search has failed to find any."

"Moas were like ostriches, only bigger, weren't they, Uncle George?"

"A very great deal bigger, and much heavier in build. Yet, less than ten years ago, a missionary reported that he had knowledge of a feast at which the Maoris, or New Zealand natives, had found, killed, and eaten a giant Moa. There's no doubt that the Maoris used to eat the Moa, as recently as a century or two ago. Their remains have been discovered in the charred remains of camp fires. Their bones are found in thousands, lying on the surface of the ground, hardly buried at all, showing how recently they became extinct.

"In one morass, abounding in warm springs, the bones of the Moa were found in enormous numbers, layer upon layer. They are there in thousands, and the only reason for that vast horde of skeletons is, that in some terribly cold winter, or, it may be, in one of the later cycles of the Ice Age, the giant birds made their way to the warm flowing springs in the hope that their feet, at least, might be safe from the biting frost, and, undoubtedly, the warm springs made the air less bitterly cold. But there was no food there, and they perished miserably from cold and want. That may have been a long time ago. Yet, Perry, only a few years ago, a Moa egg was found in a Maori grave, tightly clasped in the bony fingers of a skeleton. None the less, that doesn't prove that it was a new-laid egg!"

"It certainly wasn't when it was found, if it was in a grave," ejaculated Perry.

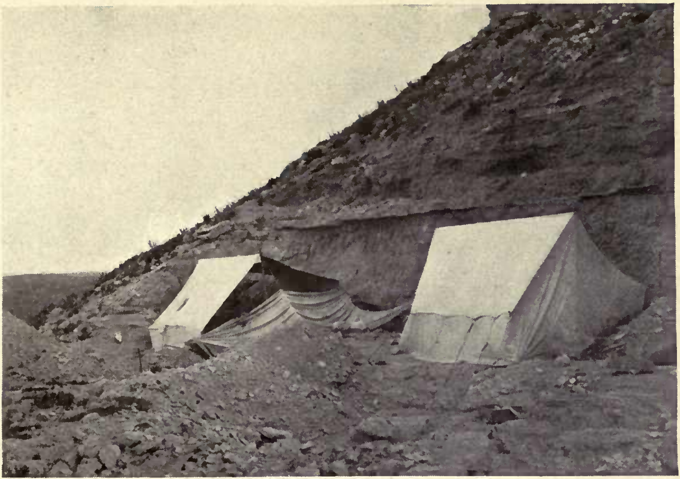
"Exactly. Finding an egg is no proof of its age. For example, a perfect egg of the Aepyornis —the biggest egg in the world, six times as large as an ostrich egg—was found after a hurricane, bobbing serenely up and down on the waves near St. Augustine's Bay."

"How in the world do you suppose it got there?"

"Probably it had been buried in a swamp," the professor replied, "and, it may be, when the hurricane uprooted a tree, the outbursting roots tore up some of the soil and exposed an egg which had been buried in the swamp muck. The egg floated to the surface and so made its way down to the sea."

"You said the Aepyornis egg was six times as big as the ostrich's egg, but the bird wasn't six times as big, was it?"

"Hardly," said the scientist, smiling; "that would be like the Roc, that Sindbad the Sailor spoke about. But I think that the huge eggs of the Aepyornis were the things that started the story about the Roc. You know, it was supposed to have its home in Madagascar. There are several of those eggs known, and one very fine one is in America. As a matter of fact, the bird was not very much bigger than an ostrich. When you come to feathered giants, Perry, Patagonia must take the lead, and when I was down there this last winter, I found some splendid specimens."



Courtesy of American Museum of Natural History.

OPENING (REAR TENT) TO MOROPUS QUARRY.

Courtesy of American Museum of Natural History.

INSIDE THE MOROPUS QUARRY, AGATE, NEB.

Museum expert uncovering bones of a Chalicothere, a strange creature with the teeth of a rhinoceros and clawed feet, twisted like those of an ant-eater.

"Oh, Uncle George, how big?"

"Well, I found a Brontornis, or Thunder Bird, with leg bones bigger than those of an ox, standing about eleven feet high. The drumstick was thirty inches long! That would be a bird to serve whole for a Christmas Dinner instead of a fourteen-pound turkey!"

Perry looked thoughtful.

"I've got a pretty good appetite," he said, "but I think a drumstick nearly a yard long would satisfy me!"

"Even that wasn't the strangest of my finds in Patagonia along the bird line," his uncle continued. "Together with one of the university men I found a fairly good specimen of that queerest of fierce birds, the Phororhacus. Imagine, Perry, a bird seven feet high, with a head as big as that of a horse, and a beak ten times as big and powerful as that of an eagle. Conceive of that head and beak poised on a heavy and densely muscled neck that could strike like a thunderbolt, and I think you would agree that a blow from that ornithological pick-ax would be a good thing to dodge! In addition, you must present to yourself the idea of legs something like those of an ostrich, but more powerful and heavier, and those bore sharp tearing claws. Decidedly the Phororachus was a bird to let strictly alone. It is hard to understand why a creature so well equipped with beak and claw perished from the earth, leaving no descendant to carry on the race.''

" None of those giant birds flew, did they, Uncle George? ''

" No,'' was the reply, " they were all too big for flight. About twenty feet span of wing or fifty to sixty pounds in weight seems to be Nature's limit to the size of anything that flies.''

" That's the size of the Pteranodon.''

" Exactly,'' the professor answered, " and he was the largest of the flying reptiles. Now a bird as heavy as Phororhacus or the elephant-footed Moa would have needed a sixty-foot spread of wing. The giant birds were all flightless and they all flourished in islands and isolated places where they had few enemies. Thus, Perry, the ostriches come from Australia, the Moas from New Zealand, the Aepyornis from Madagascar and the Phororhacus from Tierra del Fuego and from South America in the period when it was isolated from the North American continent. Now in Tasmania, which is close to Australia, it happened that two carnivorous animals developed, the Tasmanian Wolf and the Tasmanian Devil. As a result, in Tasmania there are no flightless birds. When carnivores are around, the only place of safety for a bird is in the air, and since there is a limit to flight, all the successful breeds of birds are small."

At this point Dr. Gainman, the head of the camp they were visiting and with which Antoine was working, joined the party and the conversation passed into a scientific discussion concerning the effect of geographic isolation on the development of birds, and, long before the subject had been settled, Perry had made his way to his own tent and was fast asleep.

Next morning, while Dr. Hunt and Dr. Gainman rode over to No Wood Draw, with Antoine as guide, to view the skeleton of the Hyrachyus and discuss the best means of removing it and shipping the block to New York, Perry started out alone for Haystack Butte. His ride with Round-up Dick and Antoine had given him a good idea of the country, and, on the way from the station to Blue Goose Gully, Antoine had pointed out to him its geology. Still he was surprised, when, less than an hour after leaving camp, he found himself on a well-beaten trail. Half feeling that the trail might lead in his direction, since it passed close to Haystack Butte, he followed it for a little distance. The skeleton of a horse, half buried in the soil, and, a quarter of a mile further on, the skull of an ox, made him wonder. Then, suddenly, the lad remembered a diagram in one of his old scientific books at home, showing a section of Haystack Mountain and the surrounding country, and on the diagram a winding road with the old thrilling name:

"The Overland Trail!"

Unconsciously, Perry checked his pony and looked to the westward. "The Overland Trail!" Over that trail how many emigrant trains had passed! On the long prairie stretches how many bands of hostile Indians had been fought; over the Bad Lands in which he was riding, how many emigrants had died, the men gaunt and footsore, the women weak and starved. "The Overland Trail!" No three words in all the language tell a grimmer story of American History, no three words hold more gallantry or more adventure.

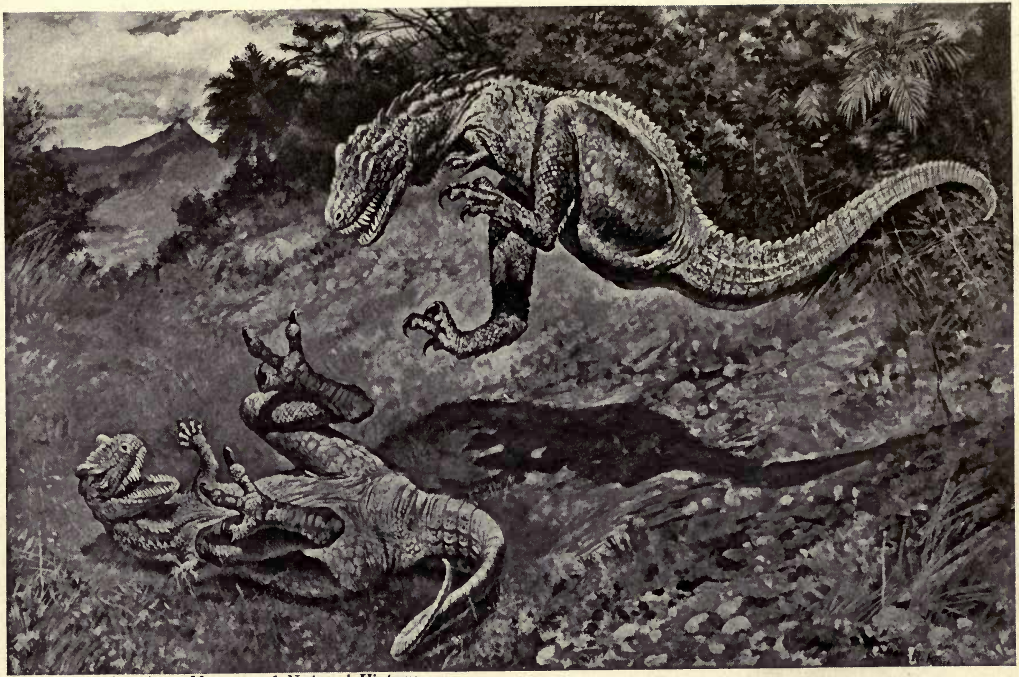
It was with a jerk that Perry pulled himself back to reality again and turned to the left from the old trail, towards the low slopes of that butte which is dignified by the name of Haystack Mountain. It took a sharp eye to distinguish between the two levels of rock, of which the distinguishing characters had been explained to Perry by Antoine, but the boy read his way correctly. Rounding one of the small erosion buttes he reached the point where one of the parties from the camp was engaged in uncovering a Eobasileus or Loxolophodon skeleton that had been discovered a week or two before.

Perry called to remembrance the rhyme his uncle had told him quoting the scornful remarks of the Loxolophodon to the aspiring Eohippus, and he smiled. He tethered his pony, and boy-like, clambered to the very top of Haystack Butte, beneath the cap of which the Eobasileus skeleton had been found. He spent the day happily roaming around the country, learning the lie of the rocks from the clues that had been given him by Antoine.

Next day, with his uncle, the boy started north for the Grey Bull River country to review the Lower Eocene Beds. Perry thought he knew his geology fairly well, but he had not the slightest idea that there could be as much excitement in a mere ride through that country with some one who was as expert as the professor. The finding of each new rock was like the finding of a new wild animal, and Perry aptly described the ride as " gunning for strata! "

The trip through the Puerco and Torrejon regions of New Mexico was also a delight to the boy, but as their researches took them further and further down the rock levels and they grew nearer and nearer to the level where the giant reptiles could be found, all the great wonder revived, and at night, in his tent, Perry dreamed again and again that he was on the back of the unicorn, speeding through that Jurassic world of giant dinosaurs. At last, the New Mexico strata sufficiently studied, the two took the train back for Wyoming once more. They picked up their ponies at the nearest station to the reptile beds and a little later stopped at an abandoned sod cabin that had been used by the Museum expedition several years before when taking out specimens from the Bone Cabin quarry.

" There, Perry," said the professor, pointing to the ruins of a small building on a hillock at the end of the valley not far from the sod cabin, " is the most marvelous fossil spot in the world. It is famous to every scientist and will be famous forever."



Courtesy of American Museum of Natural History.

THE DRYPTOSAURUS, A GIANT CARNIVOROUS REPTILE.

This form is closely allied to the Tyrannosaurus, of which several fine skeletons were discovered by the Museum expeditions. The pose of the restoration is a little too agile for a reptilian combat.

" Why, Uncle George? "

" That is Bone Cabin Hill, right at the end of that ' draw,' " was the reply, " and it is the site of the greatest find of dinosaurs made in a single locality in any part of the world. One of our own Museum men made the discovery, in the spring of 1897.

" We had been steadily working down all the beds that hold the fossils of mammals, the beds that you and I have seen, Perry, and in the spring of 1897, the Museum decided to undertake the exploration of the rocks that lay below them, rocks of the Cretaceous and Jurassic Periods. We were especially anxious to explore the rocks of the upper Jurassic, which showed the first dawn of the Mammal Age and so we made our way here, to the Laramie Plains, but over towards the base of the famous Como Bluffs.

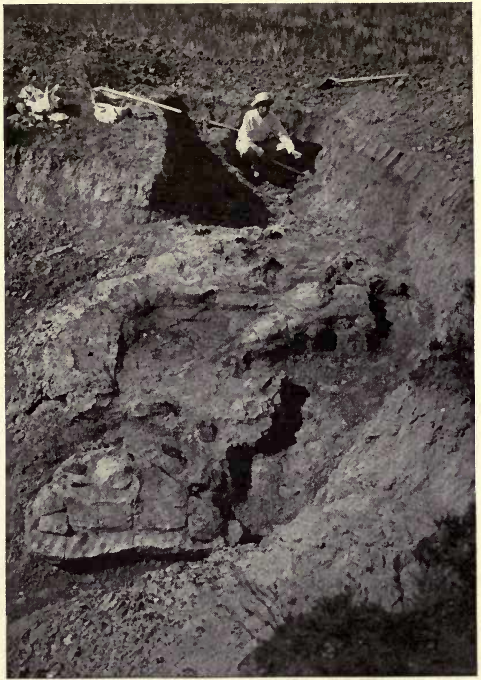
" Marsh and Cope, the great pioneers of all American fossil work, had explored these bluffs thoroughly, so that we were not very sanguine of success."

" Still, Uncle George," the boy suggested, " weathering is always going on."

" Of course," the professor answered, " that was what we counted on. When we reached the bluffs, we found numbers of bones of giant reptiles strewn along the base, tumbled from the rocks above, as gradual weathering had exposed them, but most of these were broken and so badly weathered that other collectors had passed them by. The outlook was not good, but after a few weeks we found parts of the skeleton of the Diplodocus and the Brontosaurus."

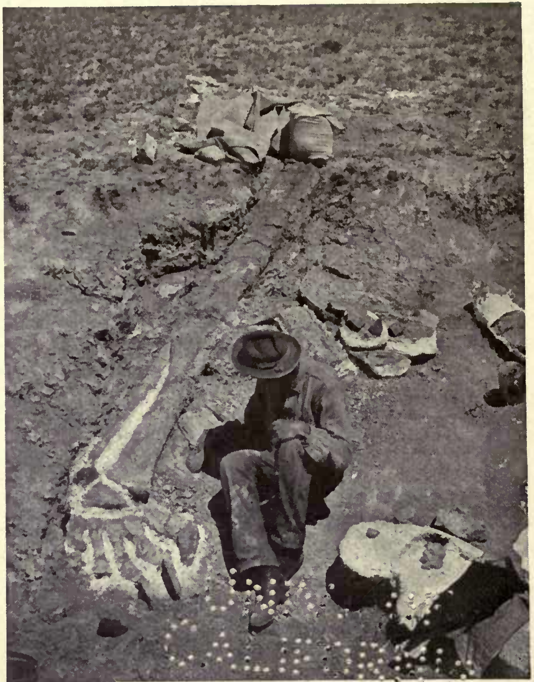
"Let's see," said Perry thoughtfully, "the Diplodocus was the long-limbed one and the Brontosaurus was a heavy brute."

"Fairly heavy," agreed the professor, "the one we found would have weighed at least thirty-eight tons when alive. The skeleton was sixty-six, nearly sixty-seven feet long. One of our men discovered it and it took the whole of one summer to extract the skeleton from the rock, here, on the Laramie Plains, and ship it to the Museum. In the New York workshops it took another two years of steady work, all day long, every day, to chip away the rock from the bones, to cement the brittle and shattered petrified bone, so that it would be strong enough to bear handling, and to restore the missing parts of each of the broken bones. And then, Perry, the mounting of the skeleton had not been begun."



Courtesy of American Museum of Natural History.

Unearthing a Saurolophus Skeleton.
Crested dinosaur of the Cretaceous period, allied to Trachodon, skull seen in foreground.



Courtesy of American Museum of Natural History.

Unearthing a Diplodocus Hind Limb.
Amphibious dinosaur of the Jurassic Period, found at Big Bone Cabin quarry.

"I can see how that would be," the boy exclaimed, "I didn't cut my Pteranodon entirely away from the rock, and just to get it partly cleared away was an awful job."

"Mounting that big skeleton was unbelievably hard," the professor continued. "No museum had ever before attempted to mount so large a fossil skeleton, and you see, Perry, the bones were so fragile that they could not even bear their own weight, much less the weight of the skeleton. Nearly every separate bone had to be specially treated and hardened so as to be rigid. Then came the question as to the way in which the bones were to be articulated together. No one had ever seen a living Brontosaurus, of course, and so there was no guide as to what he looked like. The bones were there, but bones aren't a safe guide by themselves."

"I don't see why not," remarked Perry.

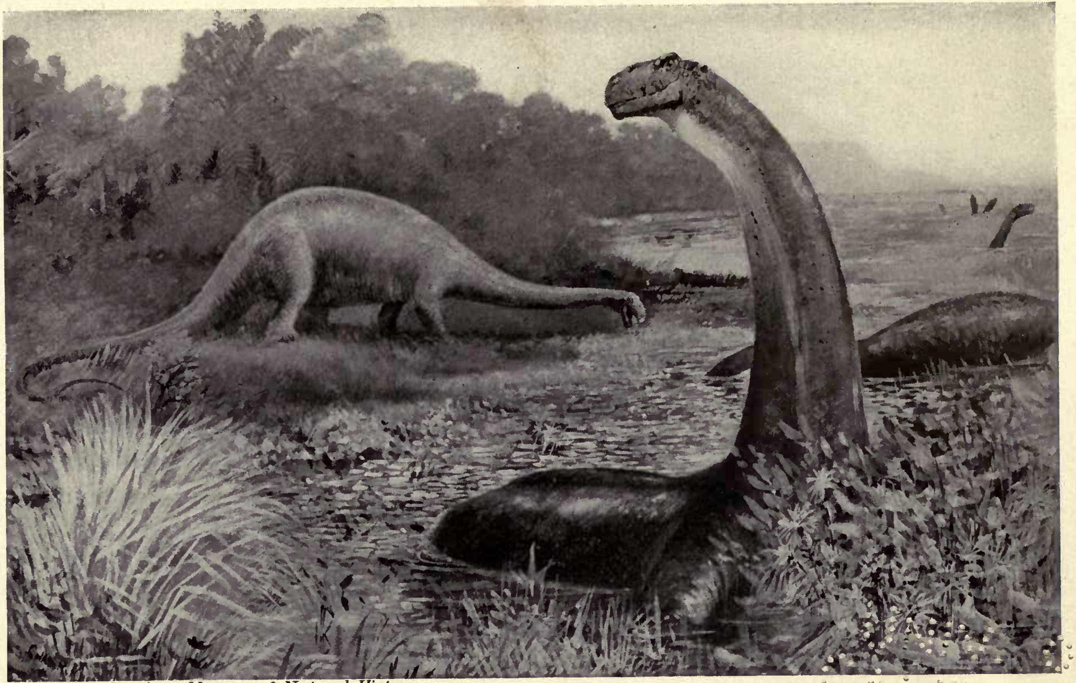
"Suppose you found the bones of a frog, but no one had ever seen a frog or anything that looked like one! You might set the animal up with those long doubled-up legs quite straight, so that he would look as though he were on stilts."

"That would sure make a queer-looking beast," said Perry, laughing.

"Exactly. So, in order to get an idea of the way the bones must have been during life, we dissected and studied nearly every living reptile, especially the alligators and the lizards, and worked out the muscles of almost all of them. Then the corresponding bones in the Brontosaurus were compared, and the position and size of the muscles worked out, as far as they could be judged from the notches and grooves still preserved on the bones."

"My word, that's real work!"

"You can be sure it was real work," the professor assured him. "Then, Perry, we articulated the skeleton loosely, and the position and size of each muscle were judged from strips of paper we pasted on the bones to represent the muscles. As we moved the joints, we watched the paper move, and compared the movement of the paper with the muscles of the living reptiles. When we got the limbs into the proper places, the whole question of the weight and pose of the body, as it must have been in life, was worked out, and finally the skeleton was mounted in what must have been the characteristic position that the Brontosaurus assumed during life. That took us another three years. It was not until three years



Courtesy of American Museum of Natural History.

BRONTOSAURUS IN HIS NATIVE SWAMP.

Huge reptile of ten million years ago, weighing not less than 38 tons, seventy feet long, once a widely spread American species.

later, or six years altogether, that the Brontosaurus skeleton was finally mounted."

"Meantime, Uncle George, I suppose you had found the Bone Cabin quarry," said the boy, anxious to bring his uncle back to the story of the discovery.

"We first found that quarry in the autumn of the year we began work on the Como Bluffs," the professor replied. "One of our fellows was doing a little prospecting over the plains, as we felt we had exhausted the Como Bluffs specimens that had been exposed so far. Now, if you remember, Perry, as we rode out here this afternoon, we sighted the Laramie Mountains and the Freeze Out Hills and I pointed out to you that they were quite recent in origin. As those ranges were uplifted, they crushed together the surface of the level plains and crumpled them into rock waves. Erosion cut away the tops of those waves and exposed the rock at the edges, though, of course, the lower parts of these rock waves are still underground and it will take the erosion of many centuries to expose them. The bone-hunters of the future will find more treasures waiting for them on the Laramie Plains, just as we have done.

" You remember, Perry, I showed you the irregularities of the bone layer. At the place where you started up that prong-horn antelope to-day, the bone layer was level, and that little gully where you retrieved that sage chicken you shot, just before dinner, was the trough of one of those rock waves. The Laramie Plains are like a huge graveyard of the giant saurians which has been crumpled like a sheet of paper. So, when we had almost finished with the Como Bluffs, we decided to prospect across the plains, watching carefully for each place that might be the top of one of these waves, and therefore might be an exposure of the fossil-bearing fresh-water rock.

" As the second in command of our party was riding over the plains, keeping a sharp lookout for the characteristic lie of the land, he noticed a little hillock. Not being a part of the usual wave formation, it did not strike him forcibly, but, in riding past, he noticed a number of brownish masses that looked like sandstone concretions. Brown sandstone is not plentiful in that region, so he looked a little more closely.

" Suddenly he pulled up with a jerk. There, at least, was something that was not sandstone! A less experienced eye would have passed the boulder by, but the Museum expert was too keen a man not to have quick perception. Another, and another and yet another! He hopped off his pony, dropped the reins, and came to the hillock.

" The entire mound was made of dinosaur bones!

" All the dark-brown boulders were the remains of ponderous fossils which had slowly washed out from a great dinosaur bed beneath. The bones had been so thickly strewn that they had held the soil together against erosion. The explorer climbed the little hillock, and there, near the top, was the abandoned dugout foundation of a shanty that some Mexican herder had built there many a year ago. It was a shallow cellar, only a few feet deep.

" The foundation was lined with a wall of fossil bones! These huge petrified blocks which the herder had only thought of as stones and used as a base for his shanty, were treasures that are now of incalculable value to the scientific world. To the trained eye, this hillock was like a sign-post slowly erected by Nature during millions of years to point the way to the great cemetery below where the most gigantic of her children lay buried.

" It was in the late spring of next year that I came on the scene. The hillock was a mass of glowing color. Wild flowers were blooming everywhere. The cacti were in full blossom, and the dwarf bushes of the desert were in the few weeks of their greenness. Half-hidden amid the flowers and the cacti were these brown boulders which had been found to be bones.

"All the three great kinds of dinosaurs were there, Perry. The bones of the huge Brontosaurus and Camarasaurus lay beneath that hillock of the great army of Amphibious Dinosaurs, those monsters with blunt pointed teeth and blunt claw, with limbs and feet like elephants, unarmored five toed, with long neck and small head; only the most tremendous of them, the Brachiosaurus, was missing. These Amphibious Dinosaurs were the largest creatures that ever trod the world, Perry, and their bulk was too great for them to have lived any other than a marsh life, when the buoyancy of the water in part sustained the weight of their enormous bodies.

"The Beaked Dinosaurs were in that Bone Cabin hillock and in the beds below by dozens. There were two or three species of the Camptosaurus, one quite small, only three or four feet high, another six or seven feet high, but both of them much smaller than their gigantic relative, the Iguanodon, which lived about the same time in Western Europe. There were those super-dreadnoughts of the dinosaur world, the short-legged Stegosaurs, built for impregnable defense, with feet like elephants, short neck, small head, and a body and tail armored with massive bony plates and large spines."

"Ah," said Perry, remembering his dream, "it was a Stegosaur that saved me!"

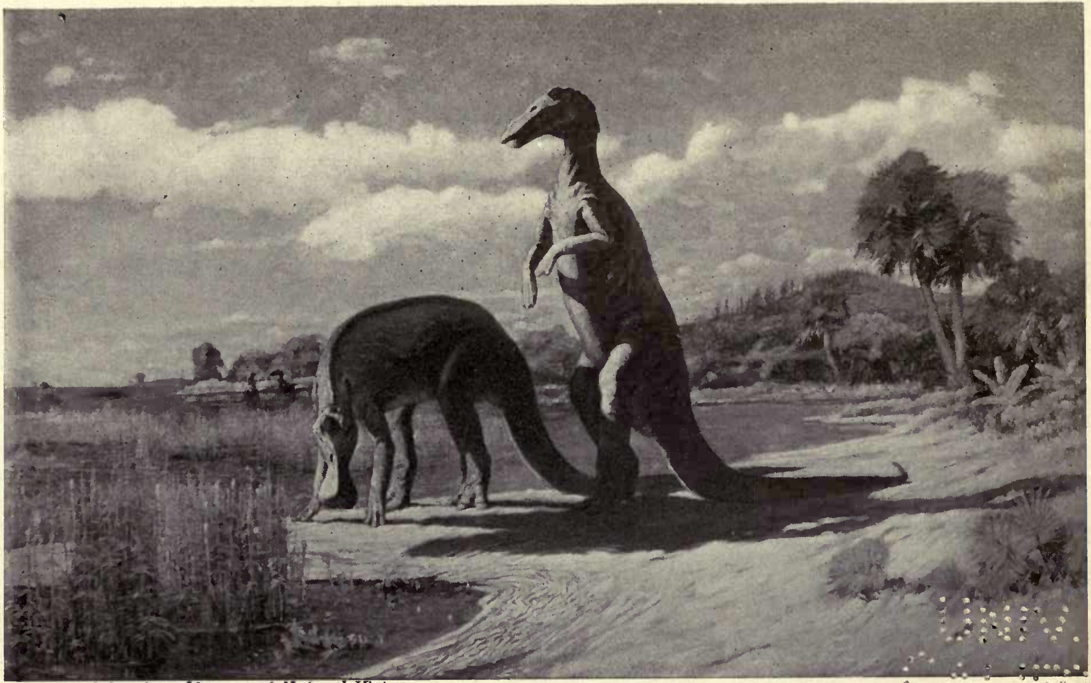
His uncle stared at him, not in the least understanding the remark, but continued:

"Then, too, there were carnivorous dinosaurs of two kinds, one a small agile beast, Ornitholestes, some six feet in length, and the other the terrible Allosaurus, a giant flesh eater, thirty-eight feet long, with bird-like feet and huge jaws armed with pointed teeth sharp as a knife and great curved talons. Not only did we find the skulls and skeletons of these beasts, but also significant evidence of their habits. The bones of the herbivorous dinosaurs, even of the Brontosaurus, were not uncommonly scored with the tooth-marks of the Allosaurus, whose broken-off teeth sometimes lay beside them in the quarry. So you see that among these Jurassic Dinosaurs there was the same division into hunters and prey that one sees everywhere in Nature. There, as everywhere else, the hunters developed weapons for attack—teeth and claws; while the hunted animals either developed some kind of armor or weapons of defense; others, again, developed means of speed for flight from their foes, or retreated to some inaccessible place for safety. The carnivora, in turn, were trying out improvements in method of capturing and attacking their prey."

"Same old fight!" exclaimed the boy.

"You can see the fight even more impressively in the Cretaceous Period, some millions of years later than the Bone Cabin dinosaurs. By that time the huge but clumsy and helpless amphibious dinosaurs had become extinct. The unarmored Camptosaurus, Iguanodonts and their relatives had taken to the water as swimmers rather than waders, and had become the Duck-billed dinosaurs, with rows of small teeth behind a duck-like bill, web feet and a powerful swimming tail.

"The armored dinosaurs had developed stronger armor, while another group had devised a novel and most extraordinary protection, a huge buckler over the head and tremendous horns over the eyes and on top of the nose. There were the



Courtesy of American Museum of Natural History.

TRACHODON, A DUCK-BILLED DINOSAUR.

Reptile, sixteen feet high, alarmed by the approach of a huge carnivorous Tyrannosaurus, ready to plunge into the water for safety.

Horned Dinosaurs, with their huge heads. One of these, Triceratops, he of the three-horned face, had a neck with an enormous bony frill like the spiked collar that some bulldogs wear, as well as his threatening horns. He was a powerful beast, Perry, this Triceratops, and must have been able to hold his own against the terrible carnivorous dinosaurs that threatened every moment of their lives."

"Were they as big?"

"Yes, bigger and far more menacing. Tyrannosaurus, the Tyrant Saurian, was perhaps the fiercest creature that ever drew breath upon the earth. He reached a length of forty-seven feet and stood twenty feet high, standing upon his huge hind legs. His head was more than four feet long and his deep jaws bore a grim array of tearing six-inch teeth. The hind legs, though larger than those of elephants, had feet like those of birds, with sharp ripping claws, and the fore-feet were clawed like the talons of an eagle."

"Not much chance if a thing like that got after you," the boy ejaculated.

"It would be a mistake, though, Perry," his uncle warned him, "to imagine even the Tyrannosaurus as swift or active. An animal larger than an elephant, with a tiny reptile brain, smaller than a man's clenched fist, could never have leapt or sprung upon a foe, but must have advanced with a heavy lumbering run. There came the value, my boy, of the great massive defense of Triceratops, the three-horned, for while that heavy head with the neck collar of plates would have been of little value against a small, swift enemy, it might easily impale the ponderous Tyrannosaurus as he ran fiercely though clumsily onward to the fight. They were slow and deadly fighters, Perry, those giant reptiles of old, and probably, every meeting meant the death of one or both, and was ended with the first or second grapple."

"I wish we could see one of those fights between two scrappy monster Saurians, anyway," the boy said wistfully.

"That is past wishing for," the scientist replied, "all we can hope for is to study the way they must have fought. Perhaps, Perry, if we should find some specimens of the great carnivorous dinosaurs, the Museum may be able to mount them in the attitude of fighting, and thus, ten million years after their death, they will thrill the world of men, when, during all their lifetime, they had no audience to applaud nor any spectators to terrorize."

The following day, and for many days thereafter, Perry prospected with his uncle throughout the Laramie Plains. He stood in the old Bone Cabin Quarry, he saw the thousands of bones that still lie at the base of the Como Bluffs, he followed eagerly and anxiously the various rock waves of the plains. Many and many a fossil he found. Indeed, there was hardly a day that he did not return to camp with news of some discovery, but always the professor found that it was a common specimen, or one of which there were more complete skeletons known. Yet, as Antoine reminded him, each day held new promise.

On the very last day but one of the time allotted for their stay, Perry decided to ride out in a different direction. His uncle had said that some time in the future he intended to do some prospecting near the Freeze Out Hills, and Perry, remembering that the Bone Cabin quarry had been found almost by accident, started out early that morning for the longest ride he had undertaken by himself. The day was hot and sultry, but the lad had a curious elation.

" I feel it in my bones that I'm going to find something to-day!" he had said to his uncle before leaving.

Noon came before he had reached the desired point, but the rock formations began to look familiar, more like those in which he had been working for the past three weeks, and so, though he was far from camp, Perry went riding onward still, knowing he would be late in returning, but buoyed up by the feeling that the fates had something good in store.

His senses were keenly awake, the green and pink striped rocks seemed to beckon him on. He felt as though the impossible might happen, as though one of the great dinosaurs might stride out, as in life, from behind some of the fantastically carved buttes on either hand. A jack rabbit, suddenly leaping along a dry ravine, brought his heart in his mouth with a jump. A stumble of his cow-pony changed the current of his thoughts and made him realize that he had not stopped for dinner, nor given his pony any water since breakfast.

Dismounting on the instant, he slung out the canteen, and, finding a slightly hollowed rock in a shadowed place where it had not been turned to blister-heat by the sun, gave his pony a drink and a handful of oats. He took out his own sandwiches and idly tossed a crumb to a lizard basking on a rock hard by. The little brown creature snatched the crumb, and with a flicker of his tail, disappeared. Idly, his lunch over, Perry followed where the lizard had gone and stooped down to look into the hole.

"If a chap could only multiply that lizard by about a hundred times," he said to himself, "it wouldn't be so awfully far from a Diplodocus. A hundred times as long—"

He stopped.

"A hundred times—"

What was that queer exposure in the rock?

He rubbed his eyes. Remembering that Antoine had warned him of the strange appearances that seemed to come in the glare of those painted rocks, he turned away and looked into the shadow. Then, hardly daring to trust his eyes, he walked over quietly and softly to a long, low mound, from three inches to a foot above the surface, which ran along the edge of a small gully.

A long broken line of weathered bone met his gaze.

Feverishly, hardly daring yet to believe that it might be true, he fell on his knees beside the bones, and with his small geological pick, began to clear away the rock, half hopefully, half fearfully seeking to make sure. The rock was fairly soft. Soon, at the end nearest to him, one of the larger bones showed clear, as the sun and weather had cracked the rock around it.

Chip, chip, chip!

The minutes and the hours passed, but the boy, down beside the brown bones on the ground, knew nothing of the time. Forty feet away, the pony plucked at the scanty herbage, but Perry never took his eyes off from the ground. The rock was not hard, and was sufficiently rotted to break under the pick, and by fractions of an inch the bones grew clearer.

Chip! Chip! Chip!

Over the mountains to the westward the sun began to fall, the shimmering heat of the desert cleared and the distant buttes glowed purple. But, though the boy's arm was aching and his back was stiff from long stooping, he was as unwitting of the pain as of the waning light, and the blows of the little hammer came down with ceaseless regularity, telling the strokes of doom that should bring some monstrous creature from its ten-million-year-old grave.

Chip! Chip! Chip!

The rim of the sun had touched the further hills, when, still in a daze, the boy straightened up and looked at what he had uncovered. Small though was the head, fragmentary as was the amount of rock he had removed, he added hope and imagination to knowledge and envisioned the whole. The monstrous length of neck which he felt sure must be the meaning of those slight outcrops hinted a colossal story. He paced the whole line of the skeleton.

One! Two! Three!—Thirty-four paces! One hundred and two feet! It could not be!

But, returning his steps, the paces came to the same.

Perry looked at the sky and knew that it was evening. Carefully he had watched his landmarks as he rode, but too many people had told him of the dangers of being lost in the Bad Lands for him to dare to try to make his way home. Still, he might make a start.

Back to his pony went the boy, and, before mounting, he looked round once again to see the great mushroom-capped butte that was his homeward guide. He could see it nowhere! And, while he watched, he saw shapes that had been quite familiar in the daylight change under the quickly fading dusk. There was no help for it, he must stay the night through and wait until the morning to find his way back to camp.

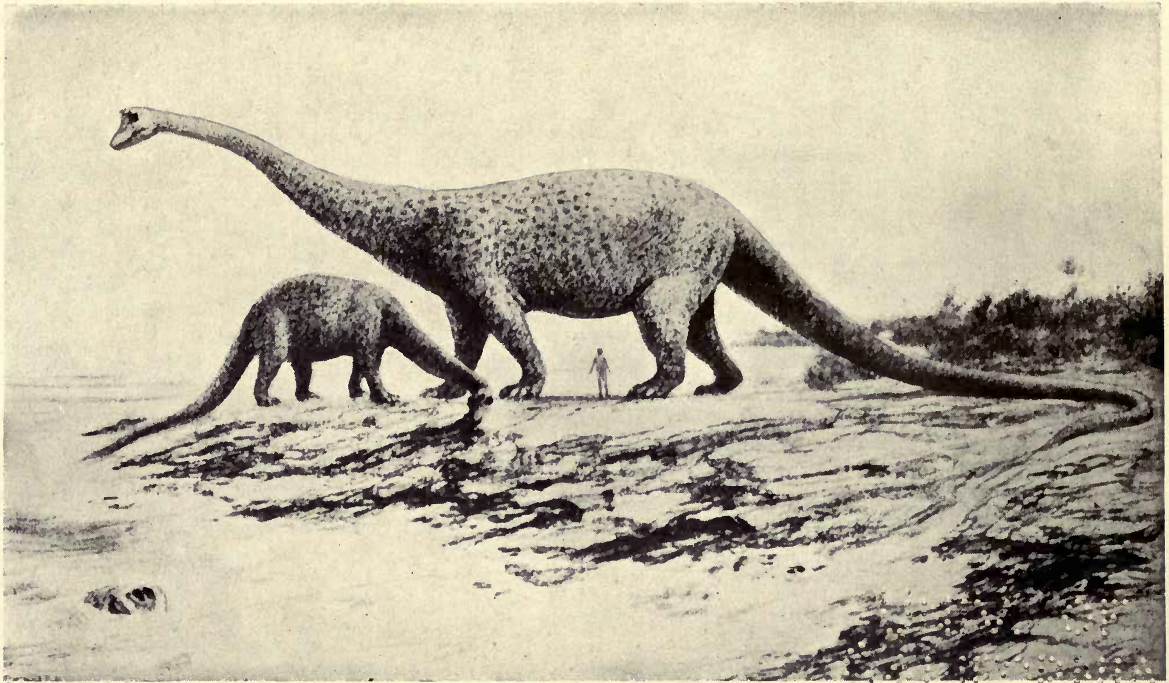
But the giant skeleton lured him again, and, a few moments later, he was on his knees again beside that ancient saurian, and the strokes of the hammer fell throbbing across the silence of a night in the Bad Lands.

Chip! Chip! Chip!

Far away in the distance, where perhaps some slight vegetation came down from the hills, for he was on the very edge of the desert country, came the long-drawn howl of a coyote. For a second the hammer hung poised, then fell again, beating, beating through the night.

He knew that to expose such a skeleton would mean the work of a month or two for several men, probably with the aid of dynamite, but he was determined at least to bring an inch or two, clear. The chill star-shine gave him light enough, but though the day had been so hot, the night was cold. He piled a heap of sage-brush and mesquite and lit a fire. Then, unable to leave his find, back he went to the skeleton again.

Chip! Chip! Chip!



Courtesy of J. B. Lippincott & Co.

A BRACHIOSAUR, LARGEST OF ALL LAND CREATURES.

Restoration of Gigantosaurus, from East Africa, closely related to the American genus Brachiosaurus (restoration based on incomplete knowledge and is much exaggerated, since, though bulkier, it probably was not longer than the Diplodocus, correct scientific restoration awaits setting-up of skeleton now in Berlin); a Diplodocus, which previously held the record for size, shown to the left; also, for comparison, the figure of a man is drawn in, though, of course, Gigantosaurus lived at least eight million years before the first man. From Gregory, in "Geology of To-day."

Little by little the form of the huge creature began to appear to him. This tiny fragment of rock grew huge to his tired eyes. Longer than a Diplodocus, bigger than a Brontosaur, the hundred feet and more of the mighty monarch of the past stretched out upon the plain, stretched as it had fallen for the last sleep on the borders of that lake ten million years ago.

The cold stole into the boy's bones, and his fingers were so weary that he could scarcely hold the hammer. He piled the fire high again, and went back to his work. But the strokes fell slowly now, and the beating of the hammer in the night was labored and irregular. The high-heaped fire sent its beacon gleam against the sky and showed the shadow of the boy, striving the long night through to bring the giant of the past to light.

Chip! . . . Chip! . . .

The hammer fell aimlessly. Ineffectively the boy made an attempt to raise it, but his fingers were nerveless. He swayed once, twice, then fell forward on his hands across the Titan, sunk in the sleep of exhaustion.

As the dawn broke, three riders, at full speed, guided by the light of the fire, came dashing down the ravine, and the first rays of the rising sun showed them the boy asleep, pillowed on the outcrop of a Brachiosaurus, which later quarrying was to prove one of the finest of its kind.

“ Some paleontologist! ” said the professor, and laid his overcoat over the sleeping boy.

THE END

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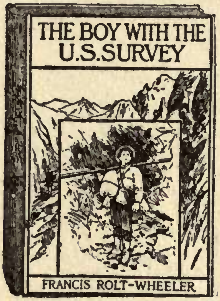

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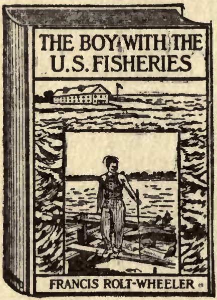
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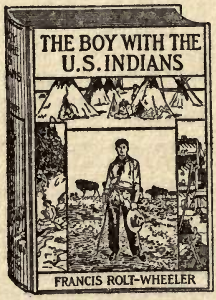
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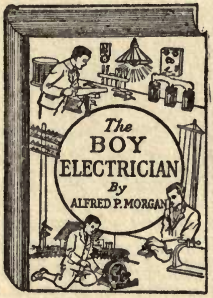

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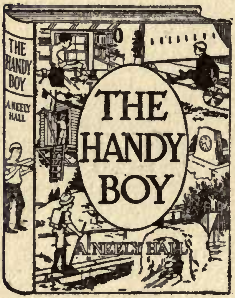

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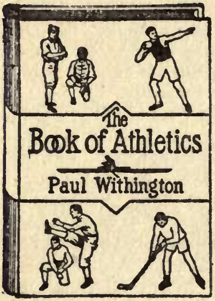

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